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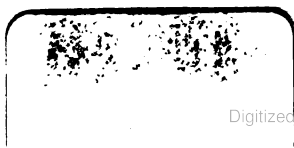




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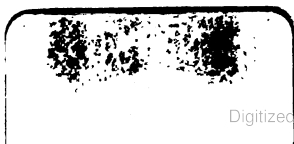




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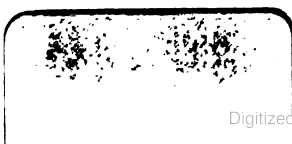




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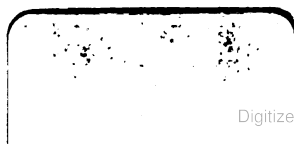




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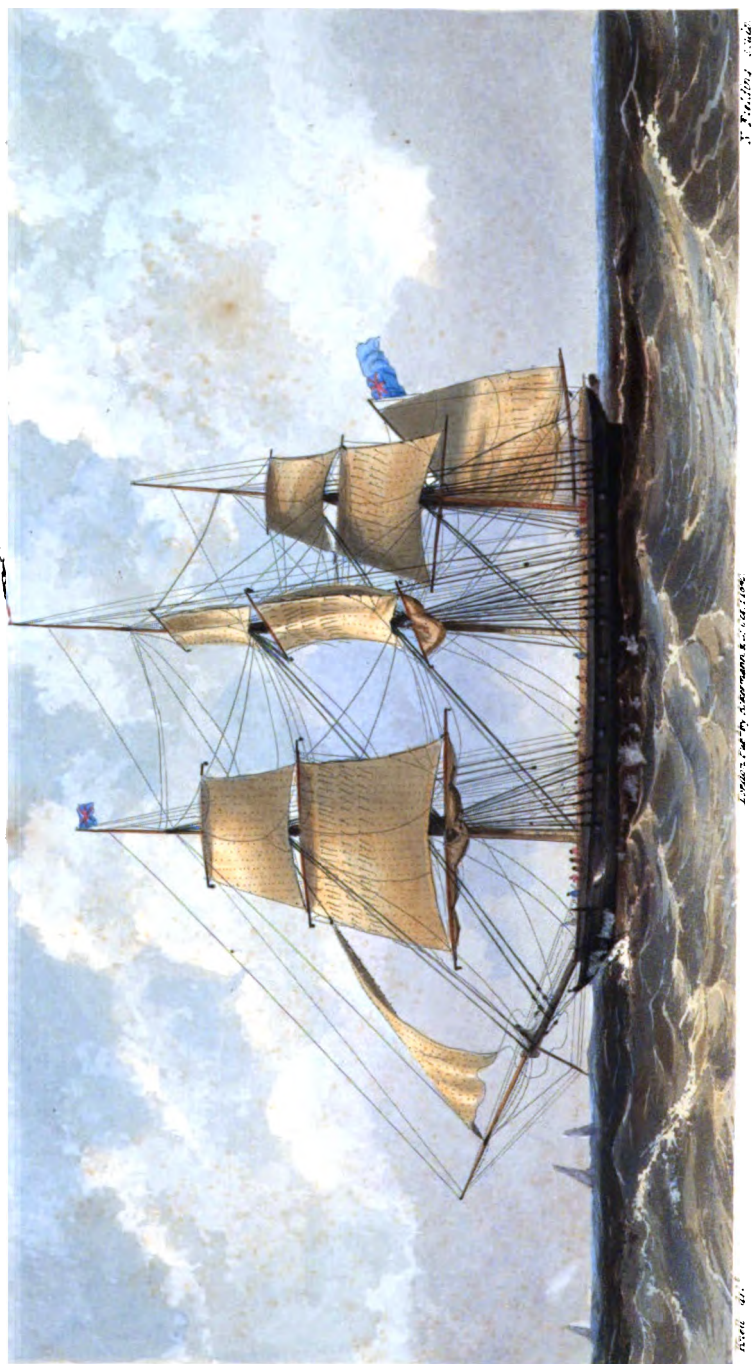
**EPITOME**  
**OF THE**  
**ROYAL NAVAL SERVICE OF ENGLAND.**



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A SLOOP OF WAR SHIP (new Class) 18 GUNS, as built 41

How to manage a ship for a War - How to Fight a Battle - How to

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Hope our anchor, Heav'n our guide.

Manners' Song.



**AN EPITOME,  
HISTORICAL AND STATISTICAL,  
DESCRIPTIVE OF THE  
ROYAL NAVAL SERVICE OF ENGLAND.**

**BY E. MILES,**

**WITH THE ASSISTANCE OF**

**LIEUTENANT LAWFORD MILES, R.N.**

**EMBELLISHED WITH EIGHT HIGHLY-FINISHED, COLOURED, ENGRAVED**

***Views of Shipping, by Wm. Knell,***

**BESIDES FOURTEEN COLOURED ILLUSTRATIONS OF**

**THE FLAGS, PENDANTS, AND ENSIGNS,**

**AS WORN BY**

**HER MAJESTY'S SHIPS AND VESSELS IN COMMISSION**



---

**LONDON:  
ACKERMANN AND COMPANY, 96, STRAND.  
1841.**

1268.

England—

“her old renown I trace, disclose her source  
Of wealth, of grandeur.”—

TO HER MOST GRACIOUS MAJESTY

*The Queen,*

THIS WORK

IS

BY THE AUTHOR

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**THE object of the following work is to present to the general reader, and those who may be intended for the nautical profession, a concise, yet comprehensive view of each and every department of the Royal Naval Service of England.**

**To complete this undertaking within the limits of one brief volume, a mode of classification has been adopted, and a system of arrangement preserved throughout, deemed the best calculated to admit in their regular order of succession, the various subjects brought under review.**

**For the contents, historical and statistical, such information only as could be obtained from accredited sources has been made available. The descriptions may be considered as founded on actual observation and practical experience—to these are added a condensed exposition of the duties and qualifications of the several ranks and classes employed in Her Majesty's Fleet, together with the principal regulations established for their government and direction.**





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#### ERRATA.

Page 1, for *personel*, read *personnel*.

Page 40, read Peace complement (of first rate) 820, 755, 725.

Page 40, (see Note) read on the stocks, and in the basin or dock, the ship is in the department of the master shipwright.

# HISTORICAL OUTLINE

OR

## THE BRITISH NAVY.

---

“The main ! the main !  
Is Britain’s reign ;  
Her pride, her glory is her fleet.”

YOUNG.

NAVY (*navye*, *nave*, old French ; *navis*, Lat.) This term, when taken in a general sense, signifies ships of commerce or of war—the mercantile as well as the military marine of a nation ; and, in those times, when no separate or exclusive force was appropriated to the warlike exigencies of the State, the maritime establishment of this country was so designated ; latterly, however, a more limited construction has obtained, and “the navy” is now commonly used to imply ships or vessels *of war only*, all others are said to belong to the merchant service.

Modern usage treats of this subject under two distinct heads, namely, *matériel* and *personel* ; the first comprehends every thing that relates to ships, their construction, armament, and equipment ; the last includes each individual deriving rank, pay, or emolument in the service of the navy, with



whatever concerns the appointment, station, and duties of officers, seamen, and marines. Assuming this, therefore, to be the best mode of classification, we shall, in the various topics which may be introduced in the course of this work, preserve as far as possible such order of arrangement.

## MATERIEL.

### MARITIME CONSTRUCTION.

“ Britain, fair daughter of the seas,  
Is born for trade, to plough her field, the wave,  
And reap the growth of every coast ;  
A speck of land ! but let her boast,  
Gods gave *the world* when they *the waters* gave.”

In seeking to trace the progress of any art or science, we are naturally led to inquire into its remotest origin : what intense interest then must be felt in all that reveals to us the first faint dawnings of England's glory, and of that noble art by means of which an island, so inconsiderable in extent, has attained to a degree of power, prosperity, and renown, hitherto unparalleled in the annals of the world. But while contemplating with sentiments of admiration and wonder such prodigious effects, we are brought to investigate more intimately the cause ; nor fail we to discover that to her maritime superiority alone is Great Britain indebted for the advantages which she possesses, and ever shall possess, so long as her kings “keep the dominion of the sea.” It is to her fleets and merchant ships—the protectors and the protected—that her inhabitants owe those numerous blessings which they enjoy above those of other nations ; and dearer far than all, that feeling of security within the precincts of their “sea-walled

garden," arising from a firm dependance on the skill and bravery of their faithful guardians, and a knowledge of the vast national resources, accumulated through a provident system of naval economy, to sustain and augment those impregnable barriers of ages—"the wooden walls of England." From these considerations we advert to the first principles of maritime construction.

The little boat is parent to the mighty ship; the floating raft, or ruder log, was precursor to the canoe, which is supposed to derive its name from *canna*, a cane, or hollow cylinder; but whether a reed broken by the wind, and drifting on the surface of the waters, first suggested to earth's earliest inhabitants the idea of a raft or boat, or whether their attention was more pleasingly attracted by the gaudy fleets of lotus, or large water-lily, which so profusely cover the lakes of China and India, must now remain a matter for grave or fanciful conjecture; the most probable supposition is, that a variety of familiar objects combined to awaken in the imitative mind of man, its latent impulse towards marine construction, which time and the school of nature gradually systematized. In this school, the inexhaustible realm of all human invention, the simple dwellers of the coasts found their models, but copied chiefly from the living creatures of the deep the shape of those bodies which were designed to occupy the same element. Who, for instance, will not recognise in the hull of every description of boat the form of the fish?—its oars the fins by which it is propelled, while mast and sail present to the "mind's eye" (in dilated proportions it is true) a shadowy resemblance to its sea-born prototype—the "ancient mariner" (*Nautilus*), whose pearly bark once glided in solitary beauty over the heaving billows of the broad Atlantic. Various other similitudes might be adduced in confirmation of this theory; but leaving the regions of conjecture we

advance with the infant art to the next, or traditionary stage of its existence.

It has been well observed, that wherever the human intellect finds a new and useful channel for its energies, not slow are its advances: and here we may suppose that improvement followed, as circumstances and position rendered necessary any extension of the recently acquired power; for, ere long, the slight canoe wafted its enterprising constructors from island to island, while commerce and civilization, seated in the prow, hailed the new risen light which blessed our aqueous world.

#### SHIP-BUILDING.

“ Sacred are ships, of birth divine,  
*An angel drew the first design*  
 With which the patriarch Nature’s ruins brav’d  
 Two Worlds abroad—an Old and New;  
 He safe o’er foaming billows flew;  
 The gods made human race—a *pilot sav’d.*”

From the obscure and often conflicting traditions of different nations, we are unable satisfactorily to determine at what precise period of time, or in what country the more advanced art of *ship-building* took its rise. The star-learned Phœnicians, the wise Egyptians, and the primitive Indians, are in turn assigned the merit of this improvement, while some, with equal or superior pretension, claim for the Chinese, the undoubted inventors of the mariner’s compass, the art of ship-building also. One thing is certain, judging from the description of Marco Polo, that their war junks and river boats, in the thirteenth century, were in all respects the same as they are at present. Further, it is recorded by one of the Mahomedan travellers, who visited China so far back as the

ninth century, that the Chinese were then in the habit of trading to the Persian Gulf *in large ships*.

Sacred history proves from the construction of the ark that the son of Lamech, if not an experienced navigator, was at least acquainted with the principles of *flotation*; and looking onward to the condition of the "chosen people," we perceive that the lesson *which an angel gave*, was not of transient benefit, or designed merely for a present purpose. The life-fraught vessel of the patriarch (left, as we are told, by the ebbing waters upon Mount Ararat, in Armenia, midway between the Euxine and Caspian Seas) was in itself a type and token of Divine favour; for, from this grand epocha, the vast, the boundless ocean became to the rescued remnant of that race which had perished by the flood, a tributary and a vassal for evermore.

Proud yet mournful is the memory of Tyre, "the golden city," "mother of crafts," and "pride of isles." From the naval strength for which she was renowned arose her surpassing wealth and luxury in trade:

"Her merchants princes; every deck a throne."

To her ports the richest treasures of the East were borne; and of a Tyrian galley the poet's description is no less beautiful than historically true:—

"The fir of Senir makes her floor;  
And Bashan's oak, transformed, her oar;  
High Lebanon her mast; far Dedan warms  
Her mantled host; Arabia feeds;  
Her sail of purple Egypt spreads;  
Arvad sends mariners; the Persian arms."

But where is now the "mart of nations?"—her ships, her mighty men—where are they? Alas! by enervating luxury undone, the jewelled sceptre fell from her hand, the crown from her brow, "and waste, and night, and horror frown, where empire flamed in gold."

The Greeks possessed an ample fleet in the days of Homer; witness "their ten years' conflict, and a thousand sail." We know that the vanquished Carthaginians supplied "that old, unquestioned pirate of the land," proud Rome, with the first rude elements of the naval art, which was subsequently transplanted to these shores about the time of the first invasion by Julius Cæsar; nor see we any reason to doubt, in the absence of evidence to the contrary, that "the Romans both introduced and left behind them the knowledge of ship-building and navigation, together with a full sense of the advantages of commerce, in a colony which surrounding seas and convenient ports had already rendered essentially maritime;" yet that those sciences were long after this in a very imperfect state, or but slowly adopted by the subjugated islanders, is apparent; for it was during the Roman usurpation, that Pliny, speaking of the winter ships of the Britons, describes them as mere frames covered with hides *well stitched*. From this temporary supineness Britain, when relinquished at last by the Romans, rapidly emerged, and with an energy characteristic of her people, soon achieved for herself a station of comparative importance. We now often read of the conquests of the Britons, in their wars with the Danes and Saxons, until their ultimate defeat by the latter closed the sanguinary contest, and opened that brilliant period of England's naval history, the reign of

## THE SEA KINGS.

"Still in the crook of shore, the coward sail  
*Till now* low crept, and peddling commerce ply'd  
 Between near joining lands."

THOMPSON.

Under the auspices of the Saxon line, England, well disciplined in the rude warfare of the times, and now become decidedly nautical, prepared, engirdled by the friendly ocean,

to take her place among the nations of civilized Europe, when as if to crown her aspiring hopes Alfred the Great appeared. This monarch, the sixth of Saxon lineage, and who, it is said, fought fifty-six battles with the Danes by sea and land, having at last driven them from the coast, in order to secure his kingdom from future aggressions, put the English upon building larger vessels for their defence: his navy consisted of galleys, luggers, and row-boats; several of the first constructed after his own plans, and capable of rowing sixty oars. It is also on record, that under the auspices of this intelligent prince, one Ochter undertook a voyage of inquiry to the Arctic regions, made a survey of the coast of Norway and Lapland, and brought to Alfred an account of the mode of fishing and catching whales, pursued by the inhabitants of those countries. Of Alfred's successors, Edward, Athelstane, and Edgar adopted with emulative zeal the system he so wisely begun, by increasing the size and number of their ships, insomuch that Edgar, who in the plentitude of his power was rowed on the river Dee by eight tributary kings, had from three to five thousand vessels divided into three fleets, stationed on three several parts of the coast, with which, passing from one fleet or squadron to the other, he circumnavigated the island. After this he asserted in his edicts the sovereignty of the *narrow seas*, styling himself "Monarch of Albion and of the adjacent Isles." Vain triumph! ere half a century had elapsed the boastful title had passed from his race, and the government of the country was vested in the hands of his life-long foes—the Danes.

Some notion may be formed of the sort of vessels which composed the British navy at this time, from the following description of one of them:—"A single mast was reared in the centre, on the head of which was a bird, or other device; the mast sustained a large square sail, which from its nature

could only be of use off the wind, and both standing and running rigging were equally simple; the *ship* was steered by a long oar, or sweep, and which was slung on the quarter under the especial charge of the pilot; the anchor, except the transverse or stock, was not unlike that now in use, and the cables were tolerably well laid." Notwithstanding, however, the scantiness of mast and rigging, the hull was adorned with every species of decoration which the taste and ingenuity of the artist could invent; of this a curious relique of ancient poetry, addressed to Queen Emma, the consort of Canute, gives a glowing picture:—" On the sterns of the ships" (the royal fleet), says the writer, " lions of molten gold were to be seen; and on the mast-heads were either birds, whose turning showed the changes of the wind, or dragons of various forms, which threatened to breathe out fire: there were to be seen (on the heads and sterns) figures looking like life, glittering with gold and silver; dolphins, also, of precious cast metal, and centaurs that brought to mind the ancient fables; but how shall I describe the sides of the vessels, which were not only painted in various colours, but swelled out with gold and silver ornaments?"

The next great event in England's history, bearing on our present subject, is the invasion of the Normans, who brought to their acquired possessions a large increase of nautical information, the accumulated stores of well-earned experience. Sir Walter Raleigh remarks, that the Normans *grew better shipwrights* than either the Danes or the Saxons, an assertion which is corroborated (in the ancient histories) by the improvement said to have taken place in the form and build of every description of vessel constructed subsequently to their settlement on these shores.

## NORMAN NAVARCHY.

“ Still more majestic shalt thou rise,  
 More dreadful from each foreign stroke,  
 As the loud blast that tears the skies  
 Serves but to root thy native oak.”

From the period of the Norman conquest, the lavish costliness which distinguished the sway of the sea kings began to decline, as science and navigation advanced; yet with these latter blended, in strange contrast, the errors and predilections of old: thus we hear of large ships *constructed by shipwrights*, ropes reaved through *blocks*, silken streamers at the mast head *for a signal*, the *maest rap* (mast rope), *fot rap* (foot rope), rudder, and *sounding-lead* in use, while stem and stern were loaded with useless and expensive “adornment,” and the rowers cheered and exhorted at their labours, according to ancient custom. It is much to be regretted that no authentic account has been preserved of the number or size of the vessels which transported William of Normandy and his noble followers to the English coast, and it is only in those events which *followed* his usurpation that we gather a knowledge of the advantages resulting from the new naval system introduced through his means.

One of the first acts of the Conqueror, chiefly as a defence against the piratical Danes, was to establish the Cinque Ports (since increased to seven), granting them certain privileges and immunities on condition of their furnishing, when required, fifty-two ships, manned with twenty-four men each, to be employed in the king’s service fifteen days free of expense to the crown. From the smallness of these complements, it has been supposed that the ships at this time were of very inferior size; such, however, might only form *a part* of their establishment, or like the crews of our transport vessels employed



during the war, sufficient merely for the purpose of navigating them.

Rufus, Henry, and Stephen (with whose reign terminates the NORMAN line) found employment for their fleets in frequent expeditions against Normandy; and Richard, who on his way to the Holy Land increased his force at the Isle of Cyprus to two hundred and sixty sail, fell in with a ship belonging to the Saracens of such an extraordinary size, that it is said her company amounted to *fifteen hundred men*, all of whom, with the exception of two hundred, Richard after taking possession of her ordered to be thrown overboard. Of what description the ships or vessels of the Crusader's armament, on leaving the English shores, individually consisted, we are now unable to discover. "An hundred and twenty large ships," say the chroniclers, "and fifty galleys."

King John, surnamed *Lack-land*, disdaining the "narrow" bounds of his predecessors, boldly claimed dominion of the "wide" or "open seas;" and, in 1213, fitted out no less than five hundred sail of ships to oppose a French fleet of three times that number, prepared by Philip for the invasion of this coast, of which three hundred vessels were taken by the English.

Henry III (who, in 1259, ceded his ancestral rights in Normandy and Anjou to the King of France) appears not to have sufficiently appreciated his naval resources: his power declined; Rochelle was taken by the French; and after an unsuccessful expedition against his former ally, a truce was agreed on; then followed Henry's wars with his barons, and it might be inferred that, at his death, the navy (as a military force) was in no very flourishing condition.

The reigns of the first and second Edward may be quoted as negative with regard to maritime improvement; although in the twenty-first year of the former a grand naval engagement took place between the French and English, by mutual

agreement, with the whole of their respective forces: the victor, Edward, carrying off more than one hundred and fifty sail from his opponent, Philip the Fair. In the latter reign, the fleet of Edward II, employed in the wars against Scotland, amounted to twenty-six ships, manned by nine hundred and seventy-six men: the wages of the *masters* computed at sixpence per day; that of the seamen, or mariners, at threepence.

Edward III brought the shipping of the nation into active service, and in person obtained a victory over the French at sea, in 1340\*; another over the Spaniards, 1350.

In the reign of Richard II, the French infesting the coast, we read that John Phillipot, an alderman of London, fitted out a fleet at his own charge, "and takes abundance of prizes." This gallant alderman was the first owner of an English privateer.

From the copy of a pardon granted to William of Wickham, Bishop of Winchester, in the first of Richard II, we learn that the Bishop had undertaken to supply King Edward III, in the fiftieth year of his reign, with three ships for a quarter of a year, each ship having *fifty men-at-arms* and *fifty bowmen*, who were to receive the usual wages and rewards: the King was to pay *the mariners*.

And here it may not be out of place to give some account of the mode of naval warfare in those times,

"Ere Britain launched her thunders o'er the deep."

The descriptions preserved to us in the pages of history represent the sea-fight of the Mediterranean as of a perfectly military

\* "It appears upon record in the King's Great Wardrobe in London, that King Edward III had before Callice, in 1347, one thousand sayle of great ships, whereof 700 were English, wherein were seamen, 14,150." HAGTHORPE. — "*England's Exchequer; or, a Discourse of the Sea.*"

character, and resembling the combats of a more classical era. The hostile fleets prepared for action by ranging their war-galleys in the form of a crescent, around that of the general in command, or admiral, who occupied the centre, from whence he could observe and regulate the movements of the fleet; the vessels being disposed, not as at present in a longitudinal line, or according to sea phrase, "in the *wake* of each other," but with prows fronting their adversaries; because the iron beaks with which they were armed projected therefrom, and the machines for throwing stones and other missiles were always placed in the fore-part of the vessel. The usual signal for action was sounding of trumpets, displaying pennons, and hoisting the banner; then the archers and close-armed men were drawn up in battle array, and the men-at-arms (stationed in the edifices, or "castles," forward and abaft) commenced the fight with arrows and darts; and lastly, contended with battle-axes, spears, and lances: during the engagement frequent efforts were made by the galleys to run down or perforate with their long beaks, the hulls of the enemy, and strong divers were taught to swim under and scuttle them while in action: in short, every stratagem which the occasion could suggest, or the laws of war justify, was resorted to, until the *hauling down of colours* on either side gave token of surrender.

Before the time of Henry II, the antique galley, with its treble bank of oars, had given place to an improved description of war-galley; this in its turn gradually disappeared before the *ship of commerce and of war*, which last was destined soon to undergo a greater and more permanent change.

The importation of great guns into this country, in the reign of Henry IV (1405) for land service, and their subsequent introduction on board vessels, is supposed to have materially affected the form and size of English ships of war.

At first, a few cannon, or other pieces of ordnance, were mounted on the deck of the galley "*en barbette*," to be fired over the sides, which were very low; soon after the top sides were raised and port-holes cut through them; and in proportion as the guns were increased in weight of metal and calibre, greater breadth was given to the vessel, in order to counteract the effect which the weight of cannon and upper works would have in diminishing her stability. About this time, also, the mariner's compass became known to English seamen. The secret of the magnetic needle was first brought to Europe by Murphy, a Dutchman, in the year 1229; but the application of magnetic attraction to direct ships on the ocean is due to Flavio John de Gioja, a Neapolitan, in 1302; the invention did not however spread abroad, nor was it perhaps perfected for more than a century afterwards.

Our fifth Harry (of whom

"It was not ellis but that he cast to be  
Lord, round about environ of the sea.")

paid great attention to his navy, and successfully maintained the maritime supremacy of England over the fleets of France. At his first invasion of Normandy, he held his court at sea in two large and beautiful ships, with sails of purple silk, on which were embroidered the arms of England and France, as typical of his claim to the crowns of both countries: one of these ships was called his "chamber," the other his "saloon." The dimensions of this monarch's vessels are unknown; but in a letter to the High Chancellor, dated Tongues, in Normandy, we find them described as "grete shippes, carrackes, barges, and balyngers."

In aid of Henry VI (1442) London and the principal ports of the kingdom furnished sixteen armed vessels, among which were "The Great Galley" and "Sovereign," of 800 tons burthen

each, and the "Grace de Dieu," of 500 tons burthen. Hagthorpe, in his *Discourse on Navigation*, says: "Henry VI made, as it were, a bridge over sea into France, with eight hundred saile of grete shippes; a thing to be admired and wondered at; where and how all these were employed, there being then no Barbarie or Turkie Companies, no Greenland or Muscovie, no East India Companie, and the West, long after unknown. It seems therefore credible, that a great part of them were kept only for defence of the island and the sove-raigntie of the sea."

Up to this time, although a Royal Fleet was not yet established, we are not to infer that our Princes were without some ships of their own: by the MS. account of Roger de Waltham, Keeper of the Great Wardrobe in the seventeenth year of Edward II, it appears that the King had then in the service of the country *eleven ships* of his own.

We have already noticed Henry V's superb "Chamber" and "Saloon;" towards the latter part of his reign he had another state ship, called "The Queen's Hall." Edward IV was owner of several ships, which were employed for his private gain in war or trade, wherein the Royal Merchant dealt largely. A curious inscription in Redcliffe churchyard, Bristol, on Canning's monument, records that this person at one time furnished the King with 2,470 tons of shipping, *to purchase his peace*. There is reason to believe that Richard III owned a few of the ships which he employed, in addition to those furnished by the Cinque Ports.

Henry VII did more towards amending the general condition of his marine, than for the individual improvement of the ships which composed it: he caused the fleet to be put into a state of efficiency to protect the coast, and laid down for building (in the third year of his reign) "The Great Harry," the first two-decker, and also properly speaking the first ship

of the Royal Navy. She had *three masts*; and, as late as the year 1545, was the only ship of that description in the British fleet: she carried eighty guns, or pieces of ordnance (the ports were not more than sixteen inches (!) out of the water); measured 138 feet in length, thirty-six feet in breadth, from outside to outside, and cost upwards of £.14,000. She was accidentally burnt at Woolwich, in her sixty-fifth year.

We have now arrived at a period when it will be necessary to observe that chronologers divide naval history into three eras:—the first, comprehending all that preceded the reign of Henry VIII; the second, ending with the restoration of Charles II; and the third, coming down from the restoration to the present day: but, as the principal division (*MATERIEL*), of which this sketch forms a part, confines us more particularly to a *history of ships*, we shall in continuation select from the records of the past, or from contemporary authorities, such details only as relate to that subject.

In the reign of Henry VIII, England, according to Raleigh and other historians, is said to have first possessed a *permanent* navy. Hitherto our marine, with the exception of “the Great Harry,” the king’s private ships, or barges, and those supplied on occasion by the Cinque Ports, consisted of vessels hired from the merchants at home, or from those of Dantzic, Hamburgh, Lubec, Genoa, and elsewhere; but Henry, whose naval force, as in the preceding reigns, was chiefly dependant on foreign auxiliaries, caused several “*shippes royall*” to be constructed for the service of the State; one of which, the “Regent,” measured 1,000 tons burthen; another, the “Marie Rose,” 500 tons burthen, carried 700 men: of this ship it is recorded, that the nearness of her ports to the water’s edge occasioned her loss, which Grafton thus describes:—“When the Admiral of France called the Lord Danibelt halsed up his sails, and with his whole navie came to the poynt of the

Isle of Wight called St. Helene's Poynt, and there, in good order, cast their ankers, and sent xvi of his galies daily to the very haven of Portsmouth;" but the English were not thus to be braved on their own shores:—"they prest, and set out towards them, and still the one shot at the other. But, one day, above al, the whole navie of the Englishmen made out and pursued to set on the Frenchmen; but, in their setting forward, a goodlye ship of England, called the 'Marie Rose,' was by too much folly drowned in the middes of the haven, for she was laden with too much ordnance, and the portes left open, which were very low, and the great ordnance unbreeched, so that when the ship should turn, the water entered, and sodainly she sank." This accident led to the raising the lower-deck ports, which were seldom above sixteen inches over the surface of the water. Another remarkable defect in construction at this time, and which long remained unremedied, was the disproportionate height of the lofty forecastles and poops to the vessels' extreme breadth. The earliest list of the Royal Navy, in which there is any classification of ships, bears date in 1546—the last year but one of this reign: there King Henry's vessels, fifty-eight in number, are specified as "shyppes," "galleases," "pynnaces," and "roo-baerges." In a representation of the "Harry Grace de Dieu" (see *Archæologia*, vol. vi), we perceive that the invention of port-holes has given the power of increasing the broadside; for, though the "Great Harry" is described as having only a single battery, the "Grace de Dieu" exhibits "tier over tier in terrible array;" fifty-four of her guns (in all eighty pieces)—of perhaps every "nature" and calibre in use, are pointed through the side-ports; others occupy the bow and stern as chasers; and those (most opprobriously) termed "murdering pieces" are mounted in-board, on the forecastle, six of them pointing in the direction of the tops:

she has four masts and three decks, with platforms fore and aft. Topham gives an historical description of an ancient picture in Windsor Castle, representing a ship, called the "Great Harry," sailing out of Dover harbour; this is evidently no other than the "Harry Grace de Dieu." "She has," he says, "*four masts*, with two *round tops* on each, except the shortest mizen; her sails and pendants are of cloth of gold, damasked; the royal standard of England is flying on each of the four quarters of the forecastle; pendants are at the mast-heads; and on every quarter of the deck is a standard of St. George's Cross."

Henry employed Italian shipwrights, and incited his own people to build large and strong ships. It was a maxim of this sagacious ruler, that "whosoever commands the sea, commands the trade of the world; whosoever commands the trade of the world, commands the riches of the world, and consequently the world itself." At the end of his reign, in January 1547, the verified list of the navy, as Derrick states it, amounted to seventy-one ships and vessels of all sorts, measuring 11,268 tons. From this time the *registered* tonnage, however different from the present modes of computation, assists the naval investigator to estimate the collective marine force of the country, and by a comparison of the periodical returns its average increase or diminution.

The fleet of Edward VI was divided into a summer guard and a winter guard; the former consisting of 2,540 tons, the latter of 2,550. At this prince's death, in 1553, the Royal Navy, amounting to fifty-three ships, is computed at 11,005 tons; a decrease, which Willet attributes to the decay of some of the ships left by Henry, "and not replaced in the pacific minority of his successor, if they ever were, till the reign of Elizabeth."

During the reign of Mary (whose consort was *Philip of*



*Spain*) the naval force of this country diminished; and at her death, in 1558, amounted to only twenty-six vessels—burthen, 7,110 tons.

Elizabeth—justly called the restorer of England's maritime glory, and who throughout her long and fortunate reign wisely connected her own interests with that of the navy—gave up a part of her private revenue, amounting to £.9,000 (no inconsiderable sum in those days), towards the ordinary supplies of the fleet: she encouraged, by liberal rewards, foreign shipwrights (particularly the Venetians) and artificers to her dockyards and arsenals, and “ordained” a great number of ships of war to be built—the largest in her navy, the “*Triumph*,” 1,000 tons burthen, carried forty-two pieces of ordnance, and 780 men. In 1688 fire-ships were first brought into use against the Spanish armada, whose final defeat after its dispersion was, it is said, in a great measure owing to the panic and confusion occasioned among the Spanish fleet by the unexpected appearance of those destructive phenomena. To repel the invading armament, which consisted of one hundred and thirty ships with 50,000 men, the English fleet, according to Pepys, amounted to one hundred and seventy-six sail, equipped with 14,992 men; of these, thirty-four ships with 6,225 men, the largest Royal Naval force ever before assembled together, belonged to the crown; the remainder were made up from the Cinque and other Ports. About this period, Sir Robert Dudley proposed to divide the ships of war into seven classes, and made out drafts of the vessels intended to designate each class, which were as follow:—“1. Galleon; 2. Rambargo; 3. Galizabra; 4. Frigata; 5. Gallerone; 6. Gallerate; 7. Passa volante.” The length of the first class (the galleon) was four times the breadth, and that of the other classes increased in proportion to their breadth; the passa volante,

which was designed for extraordinary swiftness, was in the proportion of ten times its breadth. Of Sir Robert's suggestions, one only appears to have been at that time adopted; namely, an alteration in the build of vessels, which by his advice were constructed so as to draw less water. In 1578 the fleet numbered twenty-four ships, of 10,506 tons; but during the last twenty-five years of Elizabeth's reign the Royal Navy had almost doubled its number; and at her death, in 1603, amounted to forty-two ships, measuring 17,055 tons, and manned by 8,346 seamen. The annual expense of the fleet is estimated at £.30,000.

James I is said to have paid much attention to his navy, for the use of which he gave annually £.30,000 worth of timber from the royal forests. In 1610 he caused to be constructed the "Prince" of 1,400 tons burthen. This ship, (the *chef d'œuvre* of that clever *workmaster*, Mr. Phineas Pett, "sometime Master of Arts, Emanuel College, Cambridge,") and the greatest and goodliest ever before launched from our docks, was "double built;" her keel measured one hundred and forty-four feet, and her breadth of beam forty-four feet. James I established the Shipwrights' Company, placing at its head the deservedly reputed Phineas Pett, to whose talents and assiduity may be assigned many of the improvements which took place in this department; "for," says Raleigh, "in my own time the shape of our English ships hath been greatly bettered; in extremity we carry our ordnance better than we were wont; we have added crosse-pillars in our royall shippes to strengthen them; we have given longer floares to our shippes than in olden times, and better bearing under water." The striking of topmasts was also "devised" in this reign. A list of 1612 shows that the royal fleet was then composed of the following classes:—

		TONS.	
Ships royal	}	measuring from 1,200 to 800.	
Great ships			
Middling ships	...	...	800 to 600.
Small ships	...	...	300.
Pinnaces	...	...	250 to 80.

Besides the bettered shape of the vessels, Raleigh bears testimony to various minor improvements, and adds: "to the courses we have devised studding-sails, sprit-sails, and top-sails; the weighing of the capstan is also new, and the chain-pump and bonnet: we have fallen into consideration of the length of cables, and by it we resist the malice of the greatest winds that can blow." James added ten ships to the royal fleet; which, at his death, in 1625, consisted of thirty-three ships, measuring 19,400 tons, proving that an augmentation in the *size* of vessels had also taken place.

Charles I enlarged the number as well as the size of his ships; and, in the several expeditions against Rochelle, displayed no insignificant force: his first fleet, fitted out for this purpose in 1627, under the Duke of Bucks, consisted of a hundred sail, of all sorts, with 7,000 land forces on board; and before the breaking out of the civil war, the Earl of Lindsay, in 1635, commanded a fleet of forty sail, and the Earl of Essex another of twenty sail, in order "to maintain the dominion of the narrow seas." In this reign ships were first distinguished by rates; Derrick thinks, somewhere between 1633 and 1641, there being no distinction of rates in the list of the first-mentioned year.

Towards the support of the fleet, and for supplies to build a new ship of war, Charles, in 1635, was obliged to extend to the inland as well as the maritime counties and towns his writs for ship money; which, although the whole sum levied did not exceed £.236,000, met with violent opposition, and is said to

have originated the discontents which subsequently deprived the king of his crown and life. In 1637, Commisioner Phineas Pett constructed a still larger ship than any that had preceded her, the "Sovereign of the Seas;" her tonnage, which is variously stated in the different lists, is set down by Heywood at 1,637 tons; in a later tonnage-list she stands at 1,683 tons. She was the first ship built with "flushe" decks; her keel measured one hundred and eighty-seven feet nine inches in length, and her main breadth forty-eight feet four inches. This magnificent vessel is very minutely described by Heywood, the designer of her decorations: she had eleven anchors, one of forty-four cwt., and "bare five lanthorns, the biggest of which could hold ten persons upright;" the ordnance carried, or intended to be carried, although by her encomiast stated at one hundred and twenty pieces, did not when actually mounted for home service exceed one hundred guns.

In 1641 the royal fleet consisted of—first-rates, five; second-rates, twelve; third-rates, eight; fourth-rates, six; fifth-rates, two; sixth-rates, nine: total, forty-two. At the termination of Charles's reign, in January 1649, the amount of naval force is not ascertained.

When the Revolution of 1649 placed Oliver Cromwell at the head of the Commonwealth, it is said that he could collect only fourteen men-of-war, some of which carried but forty guns, Prince Rupert having, soon after the king's death, escaped for Lisbon with the fleet under his command, amounting to twenty-five ships, none of which ever returned. To repair this loss, and moreover to compete with the Dutch (then the next most formidable maritime power in Europe, at war with England, and possessing a larger fleet), Cromwell ordered the storehouses and magazines to be replenished, and a great number of new ships to be laid down for building; one of which, singularly enough, was named the "Sovereign;" but

a more rapid acquisition of sea force was obtained by the republican fleet under command of the gallant Admiral Blake, whose *ready-made* ships (chiefly Dutch captures) did good service in the wars. At this busy period no increase in the dimensions of vessels took place; nor, although Mr. Peter Pett, son of Phineas Pett, studied successfully the art of ship-building, and gave to England her first frigate, does any other improvement claim our attention, except that from the heads and sterns of the royal ships was removed a great part of the cumbrous pile of iron and wood work, mis-called "decoration;" so that "from this time," observes James, "a man-of-war could bring half the number of her guns into broad-side action, an advantage which she never before possessed." In 1651 appears the first *classification by guns*, at which time we also find a difference between the peace and war complements, or "men abroad," and "men at home:" those intended for foreign service, on account of the insufficiency of space in the one-decked vessels to stow above nine or ten weeks' provisions, were on that account, reduced by nearly one-sixth of the average number employed in ships and vessels at home.

It has already been noticed that Charles I distributed his navy into six classes; but it was during the protectorate that those classes were clearly defined, and a regular system established, which has, with very little alteration, remained in force to the present day. In 1652, the *depth* of vessels is first officially noted: in the reign of Charles I, the length and breadth only were registered. Cromwell, during his short but arbitrary sway, had augmented the "State's Navy," as it was termed; and at his death, in 1658, it amounted to one hundred and fifty-seven serviceable ships and vessels, exclusive of four building—21,910 tons.

At the restoration of Charles II, in 1660 (from which is

dated the second period of naval history), the whole fleet amounted to only sixty-five ships and vessels; but under the government of a prince, who, according to Pepys, "possessed a transcendent mystery in maritime affairs," and with the Duke of York, his brother, as Lord High Admiral, the royal force soon augmented to a fine armament: Prince Rupert was appointed to the command of a squadron; and Lord Sandwich, under the Duke of York, presided over the fleet. In 1663, the Dutch and French having built ships of two decks, mounting from sixty to seventy guns, capable of stowing four months' provisions, and carrying their lower guns four feet above the water, Sir Anthony Deane, then Commissioner of the Navy, constructed after those models the "Rupert" and "Resolution," whose larger dimensions admitted their stowing six months' provisions, and carrying their guns four feet and a half above the water. This first effort at superior construction led to various other improvements, after the French, whose scientific skill is the more remarkable at a time, when as Voltaire observes, Louis XIV had not above fifteen or sixteen ships of the lowest rates, while the fleets of the English and Dutch nearly covered the seas.

In 1665, the Duke of York established at Gunfleet the first regular system of naval warfare in this country, and encouraged the study of military defence on board our ships of war. In 1667, the royal fleet sustained a considerable loss; for the Dutch sailing up the river Medway, as far as Chatham, burnt the "Royal Oak," the "Loyal London," "Great James," and several other ships and vessels, and carried away the hull of the "Royal Charles." But we learn, that in the same year the City of London built at their own charge another "Loyal London,"

"in her gallant trim

The Phoenix, daughter of the vanished old,"

which, fully stored and equipped, they presented as a gift to His Majesty.

The expenses of a protracted though successful war demanding large supplies, vast sums were at different times voted for the use of the fleet, which during the first ten years of Charles's reign was in excellent condition; but when in consequence of the Test Act, the Duke of York resigned office, the thriftless extravagance of the monarch, draining every channel of public expenditure, at last invaded the very sanctuary of his power, and from a fleet, which in 1679 amounted to seventy-six ships of the line (all furnished with stores for six months), eight fire-ships, and a numerous train of ketches, smacks, yachts, &c., besides thirty new ships building, the navy in little more than five years was reduced to twenty-five ships, none larger than a fourth-rate. Most of those in harbour were found unfit for service, and the thirty ships building had been suffered to fall to decay on the stocks; so that when the Duke of York was recalled to office, in 1684, he found the storehouses exhausted, negligence and waste prevailing in every department of the civil service, and the fleet yet remaining fast hastening to irretrievable ruin; the prompt and effective measures which were immediately adopted for the restoration of the fleet, appears from an abstract of the naval force at the time of the king's demise (1685); wherein we number—first-rates, nine; second-rates, fifteen; third-rates, thirty-nine; fourth-rates, forty-five; fifth-rates, eleven; sixth-rates, eight; fire-ships, sloops, yachts, small vessels, and hulks, fifty-two:—grand total, 179 *ships and vessels*—103,558 tons; showing, notwithstanding such culpable mismanagement, an increase both of shipping and tonnage in this reign.

In 1675, fire ships and yachts were noted for the first time on the official list: to the introduction of the former,

during his time, Dryden, in the "*Annus Mirabilis*," thus alludes —

"in forts and roads remote,  
Destructive fires among whole fleets we send ;  
Triumphant flames upon the waters float,  
And out-bound ships at home their journey end."

During the foregoing reign a remarkable change had taken place in scientific and mechanical operations, and the art of ship-building, so long conducted on vague and imperfect principles, began to develope higher and more extensive attributes ; for not only were the proportions and qualities of vessels improved, but the mind of the designer was turned to the enlightening pursuits of theoretical investigation ; and thus, coeval with the second period of naval history, may be justly dated that latest stage of maritime construction, so appropriately designated NAVAL ARCHITECTURE.

James II, on his accession to kingly power, continued to manifest the same warm interest, which, as Lord High Admiral he had always evinced for the welfare of the navy, and although unable wholly to retrieve the losses and injuries sustained by the fleet in the latter years of his predecessor, he improved the dock-yard and victualling departments, appointing to each class of vessel a regular supply of stores and provisions according to her force. On the abdication of James, in 1688, his secretary Pepys gave a detailed account of the royal naval force, which consisted of

		Men.	Guns.	Tons.
Rated ships .....	108 .....	40,420	6,550	} 101,892
Bombs, Fire-ships, Hoys, Hulks, } Ketches, Smacks, and Yachts. }	65 .....	1,583	380	
Total.....	173	42,003	6,930	



Under the direction of William and Mary, who made little alteration in the admirable system of the late king, ninety-nine new ships and vessels, including four *bombs* were added to the fleet, and "machines," or "infernals," the invention of M. Maesters, a Dutchman, were by Sir Cloudesly Shovel brought into use, as fire-ships, in an ineffectual attempt to burn the forts of Dunkirk. In this reign "advice boats," so called officially, were first employed before the battle of La Hogue, to gain intelligence of what was doing at Brest.

On the demise of William, in 1702, the royal naval force was estimated at ships and vessels 272, measuring 159,020 tons.

In the second year of Queen Anne's reign, a most desolating storm visited this country and the adjacent coasts, by which the royal fleet, just then returned from the Straits, sustained great damage and loss; one second-rate, four third-rates, four fourth-rates, and many other ships and vessels of inferior force were wrecked on the English coast, above fifteen hundred seamen perished, and several boats and barges were sunk on the river Thames. To supply in part the deficiencies of the fleet, a sum of money was voted by Parliament, in 1705, for providing such "capital" ships as Her Majesty thought fit. On the subject of this national calamity, an address of the Lords to the Queen, 1707, contains the following memorable words: "It is a most undoubted maxim that the honour, security, and wealth of this kingdom does depend upon the protection and encouragement of trade, and the improving and managing its naval strength: other nations, who were formerly great and powerful at sea, having by negligence and mismanagement lost their trade, have seen their maritime power entirely ruined. Therefore we do in the most earnest manner beseech your Majesty, that the sea affairs may always be your first and most peculiar care." The object of this address, which

was that the losses lately sustained should as soon as possible be repaired, Her Majesty complied with, and every measure compatible with financial economy was adopted for the benefit of the service. At the end of Anne's reign, in 1714, the list amounted to one hundred and forty-seven ships, and vessels measuring 197,219 tons, being a decrease by twenty-five ships, but an increase by 8,199 tons. Forty thousand seamen was the usual allotment voted for the service of the state.

George I, on his accession, found the fleet much out of condition, and during the first five years of his reign several large sums were expended in "extraordinary repairs and rebuilding." In 1719 the king caused a general survey to be made of the dock-yards and sea-stores; he established at the same time new dimensions for several classes of ships and vessels, wherein additional allowance for tonnage admitted an increase of size in those vessels built subsequently to the regulation. In 1721 great debates arose in the House of Lords concerning the propriety of allowing the French to build men-of-war in our ports: it was urged by some, as a most dangerous practice, as giving strength to a formidable rival, and occasioning a great expense of timber, which was then much wanted in England: by others, the privilege was defended as one *of right*, promoting and enriching the ship-building trade; "for," they argued, "if the French do not build men-of-war here, they will elsewhere, and the English may as well take their money as foreigners." Finally, the question was tried as a *legal* one, and referred to the decision of the Twelve Judges, who gave their opinion (all but Baron Montague who doubted) that it was *lawful*—on this a bill was proposed by Lord Cowper, and brought in, forbidding foreigners henceforth from building ships of war in the ports of Great Britain. At the death of George, in 1727, the fleet consisted of

		TONS.
Ships of the line.....	124	} 170,862
Of forty guns and under .....	109	
Total .....	233	

Decrease in numbers 14. Increase of tonnage 3,643.

The peaceful posture of affairs when George II came to the throne requiring no augmentation of force, the "national art" but slowly progressed, notwithstanding new dimensions for ships were established in 1733.

In 1739 the announcement of a war with Spain called forth in our naval commanders that spirit of zeal and enterprise which ten years' disuetude of the ocean chase had in no degree diminished; but when the inevitable, though somewhat disheartening comparison was made between the towering broad-decked ships of Spain, and those which bore English seamen to victory, it was no longer denied, that in order to cope fairly with other powers much still remained to be done. In 1742 another scale of increased dimensions was established; but shortly after, general complaints were made, that owing to the gradual enlargement of ships their former armament was now inadequate to their tonnage; objections were also heard of their defective construction, that they were crank, and heeled too much in blowing weather, and carried their guns too near the water. In consequence of this, in the year 1745, a committee under the presidency of Sir John Norris (composed of all flag officers unemployed, and of the commissioners of the navy who were sea officers, assisted by the master shipwrights) was ordered to prepare a "scheme of scantlings," embodying all the elements which were then judged to be the most perfect; from this new vessels were modelled, and it was found that they carried their guns well, and on the whole were stiff, but

too full formed in the after-part. In 1748 some improvements in the drafts of vessels took place, and their dimensions were further increased. At this time our ships of war, which are said to have mounted too much ordnance for their size, sailed and worked heavily; but James observes, “even this had its advantages, as the British generally recaptured their ships whenever they formed part of an enemy’s chased fleet.”

During the war with France and Spain, which was concluded in 1748, it is stated that England lost only one ship of the line of 70 guns, and a few small vessels, while those taken from France amounted to twenty ships of the line (including 50 gun ships), and fifteen Spanish ships of the line, besides small vessels of both countries.

The Royal Navy at the king’s demise, in 1760, consisted of

		TONS.
Ships of the line .....	127	} 321,104
50 gun ships and smaller vessels ...	285	
Total .....	412	

As an example of the difference, in point of dimensions, that existed between the Spanish and English ships, we quote one of either country, the first captured in 1740, the other built in the same year.

	Guns.	Length of first deck.			Breadth extreme.			Depth in hold.		Tons.
		ft.	in.		ft.	in.		ft.	in.	
Princesa... ..	70 ...	165	1	...	49	8	...	22	3 ..	1,709
Bedford .....	70 ...	150	10½	...	43	7½	...	17	10 ...	1,230
Difference .....		14	2½		6	0½		4	5	497

George III’s eventful reign of three-score years added to our chronological records a long list of successful engage-

ments by sea and land; nor less important in the annals of naval architecture was that glorious period, during which, even amidst the struggles and excitement of war, numerous useful inventions—by chance, necessity, or practical experience suggested—were, as far as possible, perfected according to the established rules of mathematical science.

In 1760 it was determined not to build any more 80 gun ships *with three decks*, and to discontinue altogether the 70 and 60 gun classes; instead of which 74 and 64 gun ships of two decks replaced the 80 gun three decker; and as a substitute for the 60 gun ship, a round house was given to the 50 gun ships for the accommodation of flag officers in time of peace. These changes were made in order to approximate more nearly to the classification of the French, whose vessels, when added to our fleet, caused a variety of classes, and much confusion in the shipping list and rating.

From the commencement of the war with Spain, in 1762, to its conclusion, in 1763, there were taken from the enemy forty-two vessels, including twenty-one of the line, while England lost but nine; *viz.* two of 50 guns, and seven under. From these and subsequent captures (the honourable spoils of war) every characteristic, deemed worthy of imitation, was by our builders speedily adopted, and thence, as we are in candour bound to acknowledge, the designs of French, Spanish, and even Americans, became a part of our architectural system; we must not however omit to add, that those designs were in our English dock-yards eminently enhanced in strength and finish by the best materials and workmanship in the world.

The first American war, which commenced in 1776, caused a considerable augmentation of frigates, sloops, and small vessels. In 1779 the Court of Directors of the East India Company passed a resolution to present the Government with three 74 gun ships, two of which were launched before the

preliminaries of peace were signed, and the other immediately after, at which time (1783) the royal navy amounted to

		TONS.
Ships of the line .....	174	} 500,781
Under .....	448	
Total .....	617	

The addition being one hundred and eighty-five ships, of which were taken from the enemy, sixty-nine of all classes registered, and of those not registered eighteen, making (according to Schomberg) a total of eighty-seven ships and vessels captured. In the course of this war—during which Great Britain had to contend with the united naval force of France, Spain, Holland, and the States of America—the dimensions of her ships and vessels were increased, and various improvements brought forward affecting not only their construction, capacity, sailing qualities, and efficiency for war service, but also their equipment of sea-stores, provisions, and ordnance.

In 1793, it being found practicable for obtaining greater speed to lengthen ships, the “Prince” of 90 guns was taken into dock at Portsmouth, and made longer by seventeen feet; and at the same time, frigates of 44 to 32 guns were given four instead of three inch bottoms.

From the commencement of hostilities, in 1793, to the peace of Amiens (1801) Steele’s Naval Chronologist gives the number of ships and vessels taken from the enemy or destroyed, including those surrendered to be held in trust: *viz.*

CAPTURED FROM THE ENEMY.		LOSS SUSTAINED BY THE ENGLISH.	
Ships of the line .....	86	Ships of the line .....	5
Frigates .....	209	Frigates .....	13
Sloops and smaller vessels	275	Sloops and smaller vessels	41
Total .. ....	570	Total .....	59

From the declaration of war, in May 1803, to the general peace, concluded in July 1815, the number of ships and vessels of war captured and destroyed by the British, with the amount of loss sustained by our fleets during the same period, as detailed at length in James's Naval History, will be found in the following abstract:—

		Captured.	Destroyed.
French, Dutch, Spanish, Danish, Turkish, American,	} Ships of the line ...	55	14
		79	23
	Total .....	134	37
British .....	{ Ships of the line ...	0	0
		80	17

In the last seven years of the war, the sea force averaged one hundred and forty ships of the line in commission, and of frigates, sloops, and smaller vessels, five hundred and eighty—those in harbour, ordinary, and building are estimated at three hundred, so that, of England's navy, at this period,

“ A thousand pendants floated  
Triumphant in the breeze.”

When, however, the welcome return of peace reduced the fleet by nearly one-half of the war establishment, and active enterprising spirits were once more liberated from the imperative claims of duty to seek in the congenial study of mechanical science, new regions of interesting discovery; that event, which in a moment altered the political aspect of nations, produced a correspondent change in every department of the service, accelerated, it might be, by the peculiar character of the times—the age of invention had arrived—and probably in no other sphere of action were its benefits more generally appreciated, or so widely diffused. In our dockyards, ships, and

arsenals, the Genius of metamorphosis was at work—masts, rigging, sails, ordnance, implements, and instruments underwent revision; the cable (originally manufactured, it is said, from the twisted fibre of the papyrus\*), started from its tough *hempen* coils into links of solid *iron*; every thing, in fact, of a tangible nature, to which the zealous inventor could attach a new idea, was re-modelled or re-made,—from the patent dock and floating light-house, to the patent floating buoy—from transom bolts and fastenings, to the copper sheathing nail. In naval architecture, also, improvements of an important nature had been effected; the weak, defenceless stern, and ill-fortified bow, gave place to forms uniting strength, solidity, and beauty; and as regards construction, certain arrangements were made in the disposition of the materials which compose the frames of ships, by substituting for the *rectangular* system a series of *triangles* united by riders and trusses—the openings between the timbers being “filled in” with pieces of wood, and caulked over†. But the grandest effort of human skill and ingenuity was destined to grace the closing reign of George III—the application of steam as a motive power to the purposes of navigation. The first steam vessel, which crossed the Atlantic, arrived from America July 15, 1819.

\* “The head of the papyrus was employed in making cables for ships; Antigonus made use of nothing else for ropes and cables for his fleet, before the use of spartum or beat grass was known.”—*Clarke on Maritime Discovery.*”

“A learned writer thinks it probable that the Carthaginians were the first who made cables for *large vessels* of the shrub spartum.”—*Ibid.*

† This plan, together with the round bow and curvilinear stern—in their day objects alike of indiscriminate praise and unqualified censure—have in some instances been adopted with modifications, in others abandoned by the present surveyor of the navy, in the construction of the magnificent ships lately built or in progress of building.—1841.

D



At the king's demise, in January 1820, the naval force stands thus —

<u>Ships, &amp;c.</u>	<u>In Commission.</u>	<u>Ordinary.</u>	<u>Building.</u>	<u>Total.</u>	<u>Tons.</u>			
Of the Line .....	14	....	113	....	22	....	149	} 605,527
Under .....	99	....	168	....	93	....	361	
Small vessels, &c....	14	....	87	....	2	....	103	
	<u>127</u>		<u>368</u>		<u>117</u>		<u>613</u>	

The total expense of the navy, including every department, civil and military, for one whole year, in the middle of the last war, has been stated at eighteen millions sterling. In the year 1820, according to the estimate laid before Parliament, the sum required amounted but to £.2,229,904, and the number of seamen and marines, which for three years successively (in the war) had exceeded 145,000, was reduced to 20,000.

During the ten years' sovereignty of George IV, nautical science continued steadily to advance, while the extension of hydrographical knowledge was promoted by liberal rewards from Government, whose discovery ships and surveying vessels, under the command of experienced officers, explored the Arctic and Southern Seas; or, coasting distant islands and unfrequented shores,

“ Through the wide pathless deep,  
By the bluff Cape, and winding Continent,”

prepared the way for social and commercial intercourse with lands unknown before, and enriched the annals of maritime discovery by authentic accounts of the habits, manners, and customs of their natives; the peculiarities of climate, seasons, winds, and natural productions, &c. In 1827, thirty steam “ brigs ” of war and one frigate were, towards the latter end of that year, ordered to be built for the service of the navy. The

"African" is the first steam vessel that appears on the official list.

At the king's demise (26th of June, 1830) the fleet numbered—

<u>Ships, &amp;c.</u>	<u>In Commission.</u>	<u>Ordinary.</u>	<u>Building.</u>	<u>Total.</u>	<u>Tons.</u>
Of the Line .....	14	75	18	107	544,416
Under .....	148	262	64	469	
Small vessels .....					
Steamers .....	7	4	1	12	
	164	341	83	588	

The sum required on the estimates for 1830 amounted to £.5,595,855, and the number of seamen and marines voted for the same period 29,000.

The short reign of William IV (the Sailor King) was distinguished by extraordinary exertions of naval ability; and, under patronage of the Royal helmsman, experimental squadrons were fitted out for the purpose of ascertaining, by comparison, the qualities of several new classes of vessels—some of them built from the designs of naval officers. As a result of the emulation thus judiciously encouraged throughout the service, increased attention was bestowed on every invention or discovery tending to elucidate the theories of floating bodies, resistance of fluids, atmospherical pressure, and practical effects of the action of the wind on the hull, masts, and sails of a ship, together with the most approved methods for estimating capacity, gravity, tonnage, centre of effort of the sails, &c. At the same time due consideration was given to the study of steam machinery, and to plans for improving the construction and capability of steam vessels, with a view to their employment as a part of the national armament.

By a statement made in 1832, it appears that upwards of a million sterling was expended for maintaining the existence of a sufficiently numerous and powerful navy.

The king's demise occurred 19th of June, 1837, and from the October list of that year the following abstract is taken, which includes the steam vessels lately built and in commission—

Ships, &c.	In Commission.		Ordinary.		Building.		Total.	Tons.
Of the Line.....	23	....	59	....	14	..	96	452,495
Under.....	163	....	219	....	43	....	425	
Small vessels, &c. }								
Steamers.....	42	....	11	....	1	....	54	15,270
	228		289		58		575	467,765

The gross estimate, for the year 1837 -8, amounted to £.4,521,501—seamen and marines, 30,200.

Soon after the commencement of the present reign, the rapidly augmenting force of other maritime nations aroused Great Britain from a state of peaceful security to the necessity of re-organizing her fleets, and resuming without delay her ancient sceptre of command—and well may the “Ocean Queen” rejoice, whose vast resources lie concentrated within the limits of her home dominion, that those years—a lapse in warlike annals—usefully devoted to commerce and the arts, have brought to a degree of perfection that young gigantic power on which her future greatness may depend. The development of steam machinery has nearly revolutionized the commercial marine, and will ultimately effect a still greater change in naval tactics; but should the Athenian motto\*, once all applicable to this island, in course of time be reversed, and the far-famed “walls” yield in importance to their *fiery* rival, a no less formidable means of defence (framed by the hands of energetic industry) might hereafter be found in the strength of *Iron bulwarks*.

\* The response of the Delphic oracle to the Athenians, as the surest means of preserving their national liberties,

“Defend yourselves by wooden walls!”

The last official list for 1840 (October) gives the following amount of force —

Ships, &c.	In Commission.		Ordinary.		Building.		Total.	Tons.
Of the Line .....	28	....	54	....	23	....	105	} 466,176
Under .....	149	....	220	....	34	....	403	
Small vessels, &c. }								
Steamers.....	65	....	15	....	7	....	87	34,066
	242		289		64		595	500,232

The whole charge for the service of the year, ending February 1841, amounts to £.5,659,051. The number of seamen, 24,165. Boys, 2,000. Marines, 9,000.—Total, 35,165.

Having given in the foregoing outline a sketch of the early condition and progressive stages of the Royal Navy, we shall now endeavour to depict the general features of the system by which it is governed; but in order to explain those changes recently introduced, it will be necessary to advert to the first establishment of

#### CLASSES AND RATES.

“ Britannia’s glory first from ships arose,  
To shipping still her power and wealth she owes.”

From the time of Henry VIII, to the period of the Restoration, ships and vessels were designated according to size and tonnage, as *great, less, middling, small, &c.* Charles I “rated” his vessels from the complement assigned to each without any reference to the ordnance carried. About the middle of the seventeenth century this method was superseded by classification according to *guns*, which continued in use through all the succeeding wars. In 1793, our ships, having outgrown their establishments of ordnance, were rated anew at so many guns and upwards; but the latitude implied by

the term, "and upwards," giving rise to great irregularities, an investigation took place in 1816, when, by an order in Council, the rule which existed previous to 1793 was revived, and ships were ordered to be rated thenceforth from the number of guns and carronades actually carried, and not according to the erroneous denominations which had latterly grown into use. The next alteration was that by his late Majesty William IV, who, setting aside the innovations of his predecessors, restored the original and simpler mode of rating ships by their *complements*—the individual force of each to be determined from the number of guns mounted, of such nature and proportions as the Board of Admiralty might from time to time be empowered to direct.

The Royal Navy, as at present constituted, comprehends three principal classes —

- I. Rated ships and yachts.
- II. Sloops and bomb vessels.
- III. All other smaller vessels.

Ships of the first class are commanded by captains: commanders are appointed to vessels of the second class: lieutenants and inferior officers command those of the third class.

By the regulations of 1833, the following rates were established —

*First Rate*—All three decked ships.

*Second Rate*—One of Her Majesty's yachts, and all two decked ships whose war complements consist of seven hundred men and upwards.

*Third Rate*—The other Royal yachts, and all yachts bearing the flag or pendant of an admiral, or captain superintendent of a dockyard; and all ships whose complements are under seven hundred, and not less than six hundred.

*Fourth Rate*—Whose complements are under six hundred, and not less than four hundred.

*Fifth Rate*—Whose complements are under four hundred, and not less than two hundred and fifty.

*Sixth Rate*—Under two hundred and fifty.

*Steam Vessels* (of four classes) are assigned a rate at the discretion of the Lords of the Admiralty.

Ships or vessels fitted as troop ships, surveying ships, fire ships, hospitals, store ships, victuallers, or for any other temporary service, are also given a rate not above the fourth.

*Description of Ships and Vessels contained in the  
Three Principal Classes.*

**RATED SHIPS**—Of the line and under—include razees, frigates, and corvettes.

**SLOOPs**—Ships and brigs—include vessels corvette built or otherwise.

**SMALLER VESSELS**—Brigs, ketches, brigantines, schooners, cutters, tenders, and lighters.

**MISCELLANEOUS**—Under this head are old ships fitted for the following purposes, *viz.* churches, schools, hulks, receiving, convict, barrack, coast-guard, and police ships; lazarettos, harbour depots, quarantine, and slop ships; coal depots, diving bell, and mooring vessels.

**SHIPS OF THE LINE**

Comprehend such as from their superior size and armament are considered of sufficient force to compose the line-of-battle, to take part in a general engagement, and whose war complements are not less than six hundred men. The first ships of an English fleet, disposed *in line-of-battle*, was on

occasion of the wars with the Dutch, nearly a century after the defeat of the Spanish Armada; and this order of sailing has ever since been found the best for preserving regularity, and performing all the necessary manœuvres and evolutions whether for attack or defence.

Of first rate line-of-battle ships there are on the navy-list three classes, as Britannia, Queen, and Impregnable, mounting respectively 120—110—104 guns. Broadside 2,028 lbs.—1,942 lbs.—1,772 lbs. Peace complement 886, 851, and 791.

To give the *non-professional* reader an idea of the magnitude and capabilities of a British “three-decker” of 120 guns, we shall relate in detail the various transactions which await a vessel of this class from the time she shall have been transferred from the department of the builder to that of the master attendant\*, until fully equipped for foreign service, i. e. with six months’ stores and provisions on board.

#### COMMISSIONING.

When a captain is appointed to a ship, he is directed to present himself without loss of time to the port-admiral; and next, to the admiral or captain superintendent of the dock-yard from whom he receives a pendant: with this he proceeds on board, reads his commission to the warrant officers in charge, and orders the pendant to be hoisted; after which he visits the ship throughout in company with the master attendant, whose

\* *On the stocks*, the ship is in the department of the builder; in the basin or docks, of the master shipwright. *Outside the dock gates, and at moorings*, the master attendant has charge of her. *When completed by the dock-yard* (over which an admiral or captain superintendent presides) she is, during her stay in harbour under the sole direction of the port-admiral, except with regard to the sailing orders of a ship not bearing his own flag.





As on the land, the Royal oak doth reign,  
Pride of the forest ! monarch of the plain !  
So, on the ocean, Britain's " Queen " doth keep  
Supreme dominion — Ruler of the deep.



A FIRST-RATE (new Class) LINE-OF-BATTLE SHIP 110 GUNS, *as the Queen* (as painted by the artist on the Carboard cover) Flag at the Fore and Main at the Fore



duty it is to inform him of every particular respecting the vessel's displacement, draft at light, and load water line, proposed trim, ballast, stowage, &c.

#### FITTING OUT

Is preceded by the captain's "demand" for certain stores and provisions from the different departments according to the ship's establishment; and during the period of fitting and rigging, a receiving hulk is allotted for the accommodation of the officers and men, on board of which some of the heaviest work is performed, as less interfering with the artificers employed in the ship. The time required for equipment depends much on circumstances, as the vessel's previous state of forwardness, but principally on the facility or difficulty of procuring men. The Admiralty highly approve the diligence of a captain who completes his ship with the least possible delay. The following remarkable instance of dispatch is noted : in 1815, the Royal Sovereign, a first rate, was by Captain Sir E. P. Brenton fitted for sea in the short space of eighteen days ! However, when no unusual obstacles retard, from six to eight weeks may be considered a fair allowance of time for this purpose.

#### FURNITURE, STORES, AND PROVISIONS.

*Ship's Furniture* comprehends masts, yards, and sails, standing and running rigging, iron ballast and tanks, anchors, cables, and hawsers; boats, blocks, pumps, fixtures, fire-engine, &c. *Stores* are of two kinds—present use, and sea stores. The former consist of such articles and materials as are required in the course of fitting; the latter comprise all that is received on board for sea service, including those following, in charge of warrant officers. *Boatswain's stores*—Spare rigging, flags, bunting, tar, canvas, hammocks, and clothes' bags, hand and sounding leads, spare compasses, &c. *Car-*

*pentier's stores*—Plank, iron-work, nails, tools, pitch, paint, oakum, &c. *Gunner's stores*—Spare breechings and tackle, powder, shot, small arms, implements, &c. *Purser's stores*—Provisions, slops\*, spare bedding, soap, coals, candles, lanterns, weights, measures, &c. *Surgeon's stores*—Medicine chest, necessaries for the sick, and dispensary articles.

SHIP'S DIMENSIONS, AND WEIGHT OF EVERY THING RECEIVED  
ON BOARD.

	ft.	in.		ft.	in.
Length .....	205	3	Breadth, extreme.....	55	5
Mean draught of water ..	25	4½	Height of portails .....	5	6

Iron ballast, tanks, water, coals, and wood, 883 tons, 15 cwt.

*Masts and Yards.*

Length.	Diam.	Weight.		
ft.	in.	tons.	cwt.	tons.
Fore mast ... 110	4 .. 36½	.. 15	18	
Main mast ... 119	8 .. 40	.. 20	2	
Mizen mast... 81	8 .. 24½	.. 5	8	
Bowsprit .....	70	1 .. 36½	.. 11	3
Weight of lower masts ....				52 11
Top masts, top gallant masts, } yards, caps, &c.....				37 1
Spare top masts, booms, spars, } &c. ....				16 11
Weight of top masts and spare..				53 12

*Rigging.*

	tons.	cwt.	
Standing .....	29	6	
Running.....	18	2	
Blocks (490).....	12	3	
Total weight ....	59	11	

} 30,250 fathoms of rope from 18 inch to ½.

*Yards of Canvas in principal Sails.*

Jib, 426; fore course, 683; fore top sail, 806; top gallant sail, 218; main course, 904; main top sail, 1,007; main top gallant sail, 290; mizen top sail, 463; mizen top gallant sail, 189; driver, 552: the remainder, including *square sails, stay sails, and studding sails*, amount in all to 7,029 yards.

\* Seamen's clothing.

	yards.		tons.	cwt.	qrs.	
Total in the sails ..	12,517 ..	Weight ..	6	19	0	} Number of sails bent and ready for use, thirty-five.
Spare sails .....	7,584 ..	..	4	4	3	
	20,101		11	3	3	

*Cables and Anchors.*

		tons.	cwt.	qrs.
10 cables	{ 5 bowers and 1 stream—hempen .....	32	10	0
	{ 3 bowers and 1 stream—iron .....	37	3	0
6 anchors—2 bowers, 1 sheet, 1 spare, 1 stream, 1 kedg		20	16	2
		90	9	2

*Provisions, &c.*

For six months, of the following articles:—bread, beef, pork, flour, suet, raisins, butter, cheese, sugar, cocoa, tea, lime-juice, tobacco, barley, peas, oatmeal, rum, wine, and vinegar; oil, candles, soap, slops—296 tons, 4 cwt.

*Armament.*

Lower deck.		Middle deck.		Main deck.		Quarter deck.		Forecastle.	
Guns.	Wt.	Guns.	Wt.	Guns.	Wt.	Guns.	Wt.	Guns.	Wt.
4, 8 in.....	65	2, 8 in.....	65	34, 32 prs..	41	14, 32 carr.	17	6, 32 prs.	45
28, 32 prs...	56	32, 32 prs..	50						

Weight of Broadside, 2,028 lbs.

Powder, 33 tons, 5 cwt.      Shot and cases, 125 tons, 15 cwt.

Weight of the guns, carronades, &c., 329 tons, 18 cwt.

	tons.	cwt.		tons.
Gunner's stores, spare } breechings, &c. .... }	39	12	Boatswain's and carpenter's stores }	54

*Boats.*

	tons.	cwt.		tons.	cwt.	qrs.
Launch.....	5	8	Pinnaes.....	1	10	0
Cutters (2).. Barge ....	1	3	Jolly boat.. Total weight ...	0	9	3
	1	10		10	0	3

When the necessary arrangements are effected, the ship's company remove on board—the officers taking possession of their respective cabins, the men are berthed and stationed, and all enter at once upon the regular duties of the ship.

(*Equipment continued*).

PEACE COMPLEMENT—886.

*Commission officers* (9)—captain, commander, 7 lieutenants. *Warrant* (20)—master, chaplain, surgeon, purser, naval instructor, 8 mates, second master, 3 assistant surgeons, gunner, boatswain, carpenter. *Quarter deck petty* (24)—16 midshipmen, 2 masters' assistants, 5 volunteers first class, 1 clerk. *Inferior petty*, 42. *Lower ratings*, 565. *Boys*, 66. The proportional number of *Marines* (160), just one-fifth of the complement, viz. a captain, 3 subalterns, 8 non-commissioned officers, fifiers, drummers, and private marines, 148.—Total, 886.

Weight of officers, men, and their effects, 102 tons, 8 cwt.

	tons.	cwt.
Hull, when launched .....	2466	18
Total received on board .....	2142	5
When complete—load displacement*...	4609	3

Number of men required to build a first rate ship in twelve months—160 in time of peace; in war time, 200. To furnish her aloft, it will take 20 riggers 300 hours, or 30 days at 10 hours per day. The rates per ton for labour (as given by Mr. Edye, to whose elaborate and valuable "Calculations" we are chiefly indebted for the items contained in the foregoing abstract)—shipwrights, £.14 13s. 5½d.; caulkers, 4s. 11d.;

\* By the *displacement* of a ship is meant the cubical contents of that part *below the water's surface*, and which, it is obvious, must be more or less according to the degree of immersion caused by its own weight and that of its equipment or lading.

joiners, 12s. 7d.; smiths, 7s. 6½d.; painters, 1s. 8d.—Total rate per ton, £.6 0s. 2d.; the whole cost of labour amounting to £.15,643. *Materials*, including oak, fir, and elm timber; iron knees, bolts, and nails; copper sheathing, lead, pitch, tar, paint, and oakum, £.29 18s. 7d. per ton—making the total amount for *ship's hull*, £.93,521; *masts, yards, and blocks*, £.6,873; *furniture and sea stores*, £.16,805.

Total expense of ship and equipment, exclusive of provisions, £.117,199.

## ECONOMY OF THE DECKS.

For *sons of ease* soft velvet spreads  
 The dome-encircled floor,  
 On pine-wood deck the *sailor* treads,  
 An "entering port" *his door*.

The decks of a first rate are the UPPER, MAIN, MIDDLE, LOWER, and ORLOP.

## THE UPPER DECK,

On the after part of which is situated the poop—comprises quarter deck, gangways, and forecastle.

THE POOP (*Castella di Poppa*, Ital.; *Castilla de Popa*, Span.) a term derived from the Mediterranean galley, on the *fore* part of which a *castle* or edifice was in former times erected—is a short elevated deck, extending from the taffrail to the companion or after-ladder—in flag ships recognized as the peculiar station of the admiral, his secretary, lieutenant, and aides-de-camp—the place whence signals are made and orders issued, directing the evolutions and manœuvres of the fleet in exercise, and during an engagement (when it becomes the post of greatest danger as of honour). From the poop of the Queen Charlotte the gallant Exmouth gave the signal for action



while anchoring his ship close under the batteries at Algiers, and on the poop deck of the *Asia*, at Navarino, the brave Codrington undauntedly stood when the cannons' sweeping fire had cleared it of all others. On this eminence, also, in time of action, the Royal marines are drawn up to annoy the enemy with their musketry.

THE QUARTER DECK — which formerly occupied, as its name implies, only a fourth part of the ship's length, but now including all the space that lies between the poop and main mast, is exclusively appropriated to the captain and officers, and may be termed the naval promenade, the military parade. Here the commanding officer gives orders for the management of the ship; and to this tribunal of justice all questions of appeal, grievance, or complaint, are brought: in point of fact, the quarter deck is the assigned place of royalty, towards which the customary "*salute*\*" is directed in token of acknowledgment and respect.

THE GANGWAYS lie between the fore mast and main mast, forming a way, or thoroughfare, from the quarter deck to the forecastle. On either of the gangways, as well as on the poop and forecastle, a sentinel is always placed when the ship is at anchor, or in harbour.

THE FORECASTLE, so called from the fort or castle erected in the *fore* part of the ancient war galley, is a continuation of the upper deck, from the gangways to the head. This deck, in charge of a lieutenant of the watch, two midshipmen, the boatswain, and a captain of the forecastle, requires the most active and efficient seamen; and its *ensemble* presents to an experienced eye a sure criterion of the general character and discipline of the ship.

\* An obeisance made by every individual on board, from the admiral to the lowest seaman, at each time of coming on the quarter deck.

## THE MAIN DECK,

In all ships of war considered the "working deck," is next below the quarter deck, with which it communicates by means of several ladders; the after part is partitioned off for the chief cabin or admiral's dining-room, as also cabins for the captain of the fleet and flag captain—occupied according to the circumstances of command. From the fore cabin to the break of the quarter deck is the half deck; thence to the chess tree; the *waist*—an open space. The remainder of the deck forward, designated the galley, is now the only part of the vessel that retains the name of its ancestral ruler of the seas. In the centre of the galley is the range, (boilers, and ovens,) compact well fitted apparatus, capable of boiling, baking, and roasting daily provisions for upwards of nine hundred persons. This realm of the culinary art is bounded at the after extremity by the forbidden precinct "no man's land," and terminated in front of the hearth by the fore mast. Between the fore and main hatchways are enclosures for the officers' *live stock*—a miniature farm-yard, consisting of sheep, pigs, poultry, and generally a small cow, or couple of goats, so that notwithstanding its dark tier of cannon grimly frowning from every port, the main deck ordinarily exhibits a more domestic appearance than any other part of the ship, and a lively and interesting picture of various employment. Here a sturdy Vulcan strikes the reverberating anvil, and forges his *bolts*; there the presiding cook and his sable attendants "look forth from their (savoury!) clouds," while grouped about in busy occupation, carpenters, coopers, sail-makers, rope-makers, ply their implements of labour, as ever and anon

"To the bluff boatswain's call  
Respond his challenged mates."

Such is the *peaceful* aspect of affairs: but place the ship suddenly in presence of an enemy; and how changes the scene! No longer the smith and his forge, the carpenter and his tools, the rope-maker and his wheels—all have vanished as if by magic—"the little warlike world" in motion—the drum low beats "to quarters"—in silent haste the decks are cleared, and all prepare for action.

The main deck is usually in charge of a mate, and under him two captains of the mast, a gunner's mate, boatswain's mate, and the *waisters* (ordinary seamen and landmen, so called from their station in the waist). On this deck the second master superintends the daily issue of fresh or salt meat, water, and grog to the ship's company; here also, twice a week, the men wash their clothes, and once in a fortnight their hammocks. When the ship is in harbour, the main-deck for some hours of each day becomes a crowded mart, through the influx of Jew pedlars, washerwomen, slop sellers (clothiers), &c., with such articles and fresh provisions as may be most acceptable to the people on board.

#### THE MIDDLE DECK.

To this, the principal descent from the main deck is by a double ladder or staircase leading to the entering port at either side, where are usually stationed a sentinel on duty, master-at-arms, and ship's corporal. In the after part is the ward room where the officers mess, their cabins occupying the spaces between the guns on each side. This deck, in charge of a mate or midshipman, is kept in the highest possible order by the marines, whose bright uniforms add not a little to its military appearance; and here a part of the ship's company, petty officers, landmen, and marines, are berthed and mess. The sick bay and dispensary take up the whole of the bow part, as affording the most comfortable accommodation, and

admitting a free circulation of air through the foremost ports. Before, however, we dismiss our notice of the middle-deck, it may be as well shortly to describe the ceremonies of the "entering port."

An admiral, or commander-in-chief—is received by the captain, a lieutenant, and a guard of marines, and conducted to the quarter deck, where, according to the regulations for military honours, he is received with a captain's guard of marines under arms, the naval officers in full uniform being also present: "then he shall be saluted by all the officers, *and the drums shall beat a march.*"

A vice-admiral, not a commander-in-chief—is received as an admiral, except that, instead of a march, "*the drums shall beat three ruffles.*"

A rear-admiral, not a commander-in-chief—received with a lieutenant's guard, all the naval officers in full uniform present, "shall be saluted by the officers, *and the drums shall beat two ruffles.*"

A commodore of the first class, not a commander-in-chief, or a captain of the fleet, not a flag officer—received with a lieutenant's guard, all the naval officers in full uniform present, "shall be saluted by the officers, *and the drum shall beat one ruffle.*"

A commodore of the second class—received by a lieutenant's guard, the naval officers in full uniform present, "shall not be saluted by the officers, *and the drum shall not beat.*"

Captains and commanders may be received with a sergeant's guard when the service will admit of it.

The boatswain "pipes the side"\* for all commanding officers—the boatswain's mate for the sea lieutenants.

\* So called the sound of a small wind instrument, used to give notice of the approach of an officer alongside, when the side-boys attend the side ropes—a second pipe announces the officer's reception on the quarter deck.

## THE LOWER DECK,

Known also as the gun deck, next below the middle, sustains the heaviest tier of ordnance, and is consequently of the strongest and firmest construction. In the after part is the gun room, separated from the rest of the deck by a row of muskets and bayonets. Within this enclosure—where slowly traverses the ship-commanding tiller—the younger midshipmen, volunteers, and master's assistants are schooled and mess. On each side are screened cabins for the subalterns of marines and other ward-room officers. The remainder of the deck forward is allotted to the ship's company, the majority of whom are here berthed, their mess tables ranged in order between the guns, and from the beams above their clean white hammocks\* are at night suspended. Upon this deck are fixed the four great pumps, whose quadruple power is equal to nine tons per minute, and through the hawse-holes of the bow are led the four principal cables—chain and hempen—for anchoring, mooring, &c. The sheet cable (the largest rope in the ship) measures twenty-six inches in circumference.

The charge of the lower deck is generally confided to one or two experienced mates. When cleared for action, its appearance is noble and imposing, and on nearest inspection can hardly fail to realize all that might previously have been imagined of the interior of a "man-of-war."

## THE ORLOP DECK, AND COCKPITS.

Underneath the lower deck the orlop extends from the fore to the after cockpit, including in breadth the space between

\* The natives of Brazil used to sleep in nets composed of the rind of the hammack tree, slung between poles fixed tight in the ground; and from that the sailor's *hammock* derived its name.

the wings, a sail room in the midst, and on either side the tiers for cables, hawsers, spare rigging, &c. In the fore cockpit, communicating with the after, by a clear passage along the wings, are the gunner's, boatswain's, and carpenter's cabins and store rooms, the latter appropriately decorated with small stores and implements of their respective departments: immediately below these is situated the principal magazine containing its tremendous charge, *thirty-three tons five hundred weight of gunpowder*. From an adjoining light room (illuminated when occasion demands) are emitted the only rays ever suffered to penetrate this awful chamber, which although remote from common accidents, and guarded with the utmost precaution, is provided with water-pipes and cistern for the purpose of inundation in case of fire: the descent to the magazine passage from the fore cockpit is protected by a strong door, and before it a trusty sentinel keeps watch both day and night. The after cockpit—to which, besides its well known historical associations, the graphic descriptions of our modern sea novelists have given additional interest—is the submarine abode of the mates, elder midshipmen, and assistant surgeons, within whose lamp-lit sphere mirth claims legitimate sway, and care is an unwelcome guest. The bright picture has however its reverse, and the joyous banquet room, the song resounding cockpit, becomes in time of action the anxious surgeon's post, where, with his assistants, aided by the chaplain, purser, and sick bay attendant, he receives the wounded and hurt, administering to each *in succession* such relief as it may be in his power to bestow.

Next to the mess berths, in the foremost part, are cabins for two lieutenants; and, in the after part, the spirit room: the rest of the cockpit is divided into surgeon's, purser's, and stewards' cabins and store rooms. From the provision department, the purser's steward issues on appointed days to the

cooks or deputies of the several messes the daily allowance\*. Below the cockpit is the after magazine (stored with powder in cartridges from the great repository), the descent to which and its light room is guarded by a careful sentinel. Strict rules are observed in the delivery of powder to the different decks, the *lower* and *middle* being supplied from the *fore* magazine, the *main deck*, *quarter deck*, and *forecastle* from the *after* magazine.

On the peace establishment, the quantity of powder allowed to be expended for exercise in a ship of 120 guns. is according to the following scale :

	Single shotted for each gun.
First six months in commission .....	12 rounds.
Second six months. ....	9
In every subsequent six months ..	7

And musket cartridges, as many as will furnish one half the seamen and all the marines with sixty rounds each—half blank and half with ball—for every six months. In addition to which, for “short practice” (firing at a target) with the two bow guns, eighty-five rounds for the same period; and also for general exercise, four rounds of blank cartridges for each gun.

\* DAILY ALLOWANCE to every person serving on board :

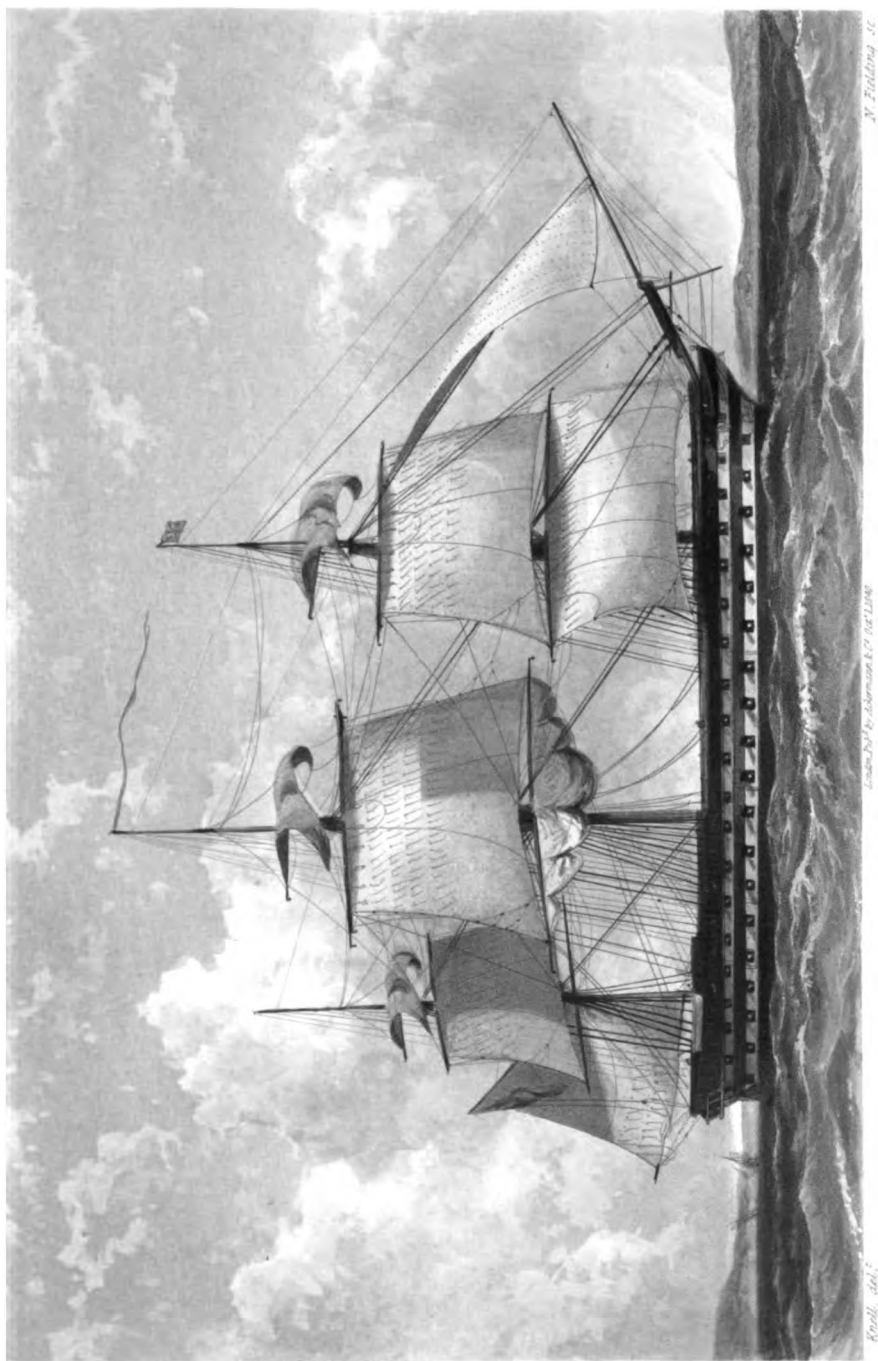
Cocoa .....	1 oz.	Bread .....	1 lb.	<i>Per Week.</i>
Sugar ....	1½ oz.	Vegetables ....	½ lb.	—
Tea .....	½ oz.	Beer .....	1 gal.	Vinegar.. ½ pint.
Fresh Meat ...	1 lb.	Flour.....	¾ lb.	Oatmeal. ½ pint.
or Salt do...	¾ lb.	or Pease...	½ pint.	

When circumstances admit an alteration, any of the above species may be substituted for another, more or less in quantity, but of equal value; as, for *bread* or *biscuit*, rice or flour—for *cocoa*, coffee or cheese—for *sugar*, butter—for a portion of *flour*, suet and raisins, or currants.





A stately warlike ship ! inured to brave  
Stern ocean's wrath, and plough the rolling wave --  
But not for distant climes those sails expand,  
Coasting the shore -- she guards her native land.



A SECOND RATE (new Class) LINE-OF-BATTLE SHIP, 92 GUNS, as it now is.

Painted by the late Mr. John Piddington and engraved by J. Piddington.



Concluding here our inadequate description of a three deck ship of war, we proceed to a definition of the remaining rates and denominations, with each of which, as in the foregoing, shall be given a summary of the new establishments of ordnance, and (from Mr. Edye's tables) a condensed abstract of the quantity of stores and provisions allowed to every ship or vessel of the rate or class specified. Some difference, however, will be found between the weight of guns and ammunition, as set down in the calculations, and that of the increased scale of 1840.

#### SECOND RATE.

Next in importance to the first rate, the *second* takes her station in the line of battle; and, if not deficient in sailing qualities, is considered a good leading ship, being from her size and power able to compete with the largest of an enemy, to which she has not unfrequently proved herself, as an adversary, the superior. Of second rate ships, there are at present in the Fleet, three classes; as Rodney, 92—Thunderer, 84—and Vanguard, 80 guns. Weight of broadside, 1,652 lbs.—1,488 lbs.—1,496 lbs. Peace complement of the first class, 695—second and third class, 645 each.

The first class second rates are fine and powerful ships, possessing every requisite for prolonged and arduous service, but the new 80 gun ship, as exemplified in the favourite Vanguard\*, is undoubtedly the most perfect specimen of an English line-of-battle ship hitherto constructed. The Rodney measures 2,625 tons—Vanguard, 2,609 tons.

Taking as an average of the medium class a ship of 2,279

\* The character for high discipline, which this ship has had the good fortune to obtain, serves to bring her own excellent qualities more frequently into notice.

tons burthen (as *Thunderer*), her equipment for foreign service on the peace establishment would be as follows :

Iron ballast, tanks, water, coals, and wood, 710 tons.

	tons.	cwt.	qrs.		tons.	cwt.	qrs.
Lower masts and bowsprit..	51	18	2	Rigging and blocks .....	56	12	0
Top masts, yards, caps, &c..	37	1	3	Ship's sails (12,947 yds.)...	7	5	3
Spare top masts, booms, &c.	16	11	3	Spare sails (7,844 yds.) ....	4	7	0

10 cables { 5 bowers and 1 stream—hempen } 66 tons, 6 cwt.  
                   { 3 bowers and 1 stream—iron }

6 anchors—2 bowers, 1 sheet, 1 spare, 1 stream, 1 kedge, 17 tons, 8 cwt.

Provisions, spirits, and slops, 241 tons, 15 cwt.

#### *Armament.*

Lower deck.		Main deck.		Quarter deck, and Forecastle.	
Guns.	Wt. cwt.	Guns.	Wt. cwt.		Wt. cwt.
6, 8 in.....	65	2, 8 in.....	65	16, 32 car. ....	17
24, 32 prs.....	56	30, 32 prs.....	48	6, 32 prs.....	41

	tons.	cwt.		tons.	cwt.
Powder and shot, guns, } carronades, &c. .... }	347	17	Gunner's, boatswain's, } and carpenter's stores }	78	17

Boats—(same number as first rate), 9 tons, 14 cwt., 3 qrs.

#### PEACE COMPLEMENT—645.

*Commission officers* (8)—captain, commander, 6 lieutenants. *Warrant* (19)—master, chaplain, surgeon, purser, naval instructor, 8 mates, second master, 2 assistant surgeons, gunner, boatswain, carpenter. *Quarter deck petty* (20)—12 midshipmen, 2 masters' assistants, 5 volunteers first class, 1 clerk. *Inferior petty officers*, and *Lower ratings*, 388. *Boys*, 60. *Marines*, 150, viz. captain, 2 subalterns, non-com-

missioned officers, fifiers, drummers, and private marines, 147.  
— Total, 645.

Weight of officers, men, and their effects, 78 tons.

	tons.	cwt.
Hull, when launched .....	1882	6
Total received on board .....	1723	14
When complete—load displacement .....	3606	0

Number of men required to build a second rate ship in twelve months (in time of peace), 122½. To furnish her aloft 20 riggers for 285 hours. Rate per ton for labour—shipwrights and artificers, £.5 5s. Materials, £.23 7s. 9d. per ton. Cost of ships' hull, £.65,279; masts, yards, rigging, and blocks, £.6,503; furniture and sea stores, £.15,114. Total expense of ship and equipment, exclusive of provisions, £.86,896.

ROYAL YACHTS.—Three small ships (the largest not exceeding in burthen 330 tons), lightly armed and handsomely fitted, to receive or attend on the Sovereign or members of the Royal Family. The other yachts, of smaller size, are allowed to admirals, and captains, superintendent of dock yards. As it may appear anomalous to find these “summer barks” classed officially with *ships of the line*, it should be explained that this classification refers only to the *rates of pay* of the officers and men appointed to serve on board, which is according to the rate which the yacht is assigned. The first yacht known in England was one called the Mary, which the Dutch, in 1660, sent as a present to King Charles.

#### THIRD RATE.

*Individually* the least in force composing the line-of-battle, but *numerically* the greatest, the third rate forms a useful

intermediate class between the larger ships of the line, which are a little too heavy for rapid movement, and the frigates which are often too weak to cope with the formidable batteries and other defences that afford shelter to an enemy. From this rate—so necessary to a blockading fleet or on detached service—Lord Nelson, before the battle of Trafalgar, chose for his vanguard squadron seven of the best sailing 74 gun ships, as possessing above all others those two essential requisites, strength and activity combined.

We have at present in the Royal Fleet—of third rates three classes, as *Revenge*, 78 — *Blenheim*, 72 — *Boscawen*, 70 guns. Weight of broadside, 1,356 lbs.—1,224 lbs.—1,228 lbs. Peace complement, first class, 590—second, 540—third, 570.

The scale of equipment for the medium class, or 72 gun ship (better known by its former armament of 74 guns) is as follows :

Iron ballast, tanks, water, coals, and wood, 508 tons, 9 cwt.

	tons.	cwt.	qrs.		tons.	cwt.	qrs.
Lower masts, and bowsprit.	36	14	0	Rigging and blocks .....	54	9	0
Top masts, yards, caps, &c.	27	11	0	Ship's sails, (10,784 yds.)..	6	0	2
Spare top masts, booms, &c.	12	12	0	Spare sails, (6,650 yds.) ..	3	14	1

10 cables { 5 bowers and 1 stream—hempen } 56 tons, 1 cwt.  
                   { 8 bowers and 1 stream—iron }

6 anchors—2 bowers, 1 sheet, 1 spare, 1 stream, 1 kedge, 15 tons, 5 cwt.

Provisions, spirits, and slops, 214 tons, 18 cwt.

#### *Armament.*

Lower deck.		Main deck.		Quarter deck, and Forecastle.	
Guns.	Wt. cwt.	Guns.	Wt. cwt.	Guns.	Wt. cwt.
4, 8 in. ....	65	28, 32 prs. ....	41	12, 32 car. ....	17
24, 32 prs. ....	56			4, 32 prs. ....	41

	tons.	cwt.	qrs.		tons.	cwt.
Powder and shot, guns, } carronades, &c.	279	0	2	Gunner's, boatswain's, } and carpenter's stores	70	2

Boats — (same number as first rate), 9 tons, 14 cwt., 3 qrs.

## PEACE COMPLEMENT—540.

*Commission officers* (7)—captain, commander, 5 lieutenants. *Warrant* (16)—master, chaplain, surgeon, purser, naval instructor, 5 mates, second master, 2 assistant surgeons, gunner, boatswain, carpenter. *Quarter deck petty* (19)—11 midshipmen, 2 masters' assistants, 5 volunteers first class, 1 clerk. *Inferior petty officers* and *Lower ratings*, 320. *Boys*, 53. *Marines*, 125, viz. captain, 2 subalterns, non-commissioned officers, fifiers, drummers, and private marines, 122. — Total, 540.

Weight of officers, men, and their effects, 65 tons.

	tons.	cwt.
Hull, when launched .....	1616	16
Total received on board.....	1359	11
When complete — load displacement... ..	2976	6

Number of men required to build a third rate ship in twelve months (in time of peace), 97. To furnish her aloft, 20 riggers for 285 hours. Rate per ton for labour, £.5 10s. 5d. Materials, £.28 0s. 3d. per ton. Cost of ship's hull, £.58,388; masts, yards, rigging, and blocks, £.5,685; furniture and sea stores, £.12,433. Total expense of ship and equipment, exclusive of provisions, £.76,506.

## RAZEES.

**RAZEE**—so called, a ship, which to remedy some defect in construction, or to improve her sailing qualities, has been reduced by taking off the upper deck. This plan, first tried in the year 1794 on three 64 gun ships—the *Anson*, *Indefatigable*, and *Magnanime*—originated with the French, who a short time previously had cut down some of their seventy-fours, calling them *Vaisseaux rasés*.

On the same principle as the conversion of the seventy-four



to a razee frigate, is the razee corvette obtained from a frigate reduced.

#### FRIGATES.

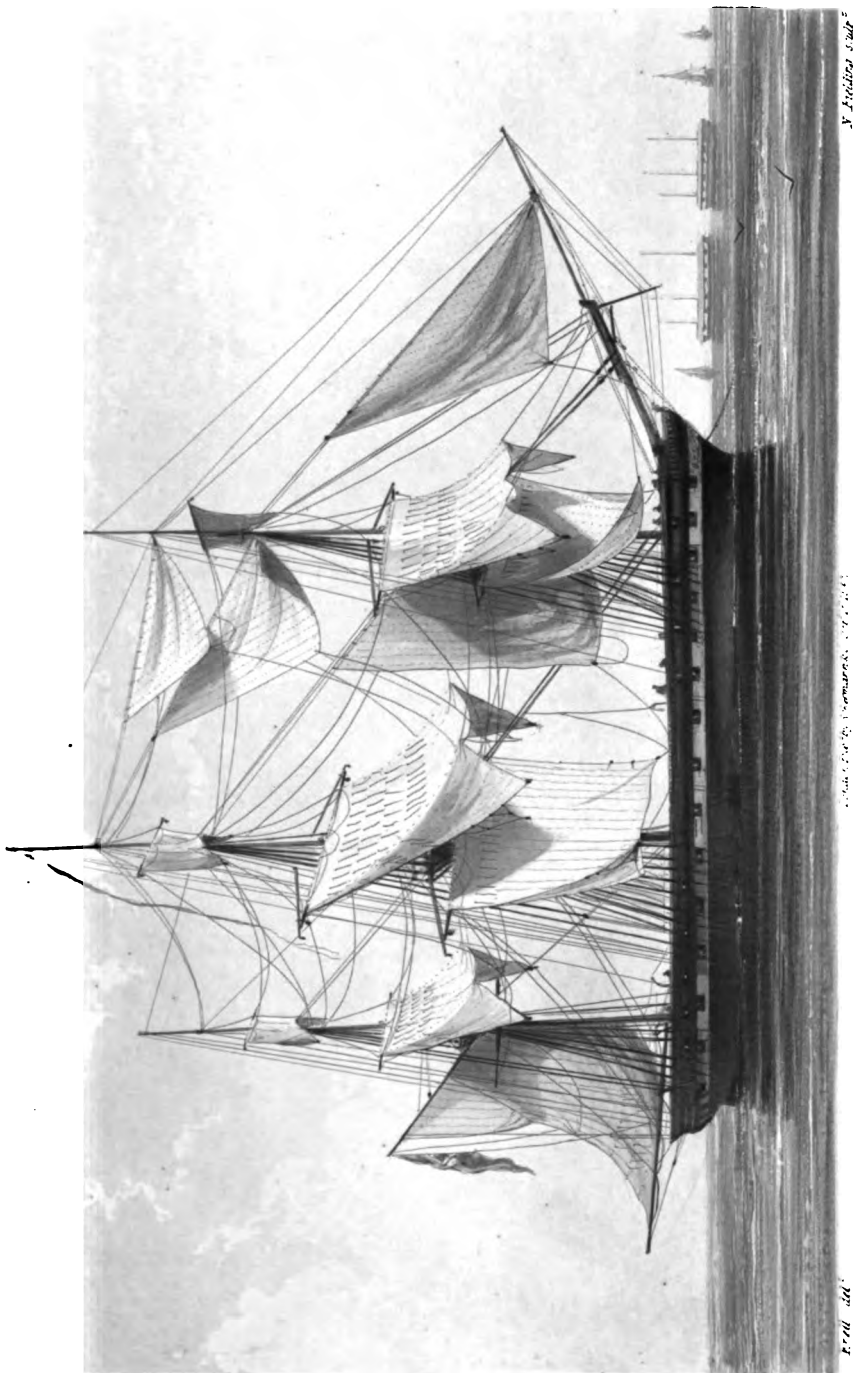
This denomination (not altogether *official*, yet exclusively *naval*) comprehends the greater proportion of rated ships under the line.

FRIGATE (*Frégate*, Fr.; *Fregata*, Ital.) defined by Falconer as "a light nimble ship, built for the purpose of sailing swiftly." Lescallier in his "*Vocabulaire des Termes de Marine*," says, "frigate is a ship nearly the same as a ship of the line, which she resembles in her manœuvres"—by English seamen, however, the term frigate is applied to a ship carrying guns on a single whole deck, quarter deck, and forecastle. The first frigate, constructed in this country, was the *Constant Warwick*, of 26 guns—burthen 380 to 400 tons. She was laid down in the year 1646 by Mr. Peter Pett, and fitted as a privateer for the Earl of Warwick, by whom she was subsequently transferred or sold to the Government. Pett, according to Mr. Secretary Pepys, took his model from a French frigate which he had seen in the river Thames. Our naval records bear testimony to the fame of this ship as "an incomparable sayler," and through all the official lists preserve her name while in existence; but it is only from the words of an old song of Queen Anne's time, that we learn how, in the calamitous storm of 1703, the *Warwick*, then in her fifty-fourth year, was one of those unfortunate vessels wrecked on the British coast. The French are supposed to have taken the form of the frigate (which Fuller describes as long, low, and narrow) from the Mediterranean coasters, who navigated a kind of galley with sails and oars, called *fregata*. The English, were, by all accounts, the first who appeared on the ocean with those vessels armed for war; and the *Southampton* (built in 1757)



“Slack from their height the sails unmov’d decline,  
The airy streamers form the downward line;  
No flutt’ring quiver owns the gentle gale,  
Nor lightest swell disturbs the loosen’d sail.”

Lusiadas.



LARGE FRIGATE (new Class) OF 50 GUNS, as *Vermont*, &c.

As shown in 1842, before the ship was converted into a frigate.



was the first ship possessing all the characteristics of a modern or proper frigate.

The duties of a frigate attached to a fleet depend not only on her size, and the number of other frigates present, but also on the nature of the service upon which she is engaged—and her capabilities as a good sailer, &c. Her place in action is detached from the line of battle, to which she is nevertheless so absolutely essential, as to be termed “the eye of the fleet:” her chief employment (stationed at a convenient distance and bearing from the admiral) is to execute his orders, and repeat his signals to the fleet. Sometimes she is sent away with despatches, or to convoy merchant vessels, store ships, disabled ships, or prizes, in safety to their destination. On blockade service the frigate forms a part of the in-shore squadron, to reconnoitre and report the motions of the enemy.

## FOURTH RATE.

Referring to this rate we find it to consist of two classes of large frigates, as Vernon and Portland, mounting each 50 guns. Weight of broadside, 908 lbs., and 872 lbs. Peace complement, 445 and 395. Of the first class, the Vernon may be instanced as an example of the improved principle of construction; namely, increasing the breadth on deck and diminishing that of the hold. Her hull exhibits the symmetry of the cutter, increased to the proportion of the frigate. Masts and yards the same as for a seventy-two: measurement, 2,082 tons.

A fourth rate of the second class (average measurement 1,468 tons) receives as her established equipment

Iron ballast, tanks, water, coals, and wood, 445 tons.

	tons. cwt.			tons. cwt.	
Lower masts and bowsprit . . .	34	2	Rigging and blocks . . . . .	51	9
Top masts, yards, caps, &c. . .	27	11	Ship's sails (10,824 yds.) . . .	6	1
Spare top masts, booms, &c. . .	12	12	Spare sails (6,600 yds.) . . . .	3	14

## MATERIEL.

9 cables { 4 bowers and 1 stream—hempen } 56 tons, 1 cwt.  
          { 3 bowers and 1 stream—iron }

	tons.	cwt.	qrs.
6 anchors—2 bowers, 1 sheet, 1 spare, 1 stream, 1 kedge,	12	10	2

**Provisions, spirits, and slops, 118 tons.**

**Armament.**

Main deck.		Quarter deck.		Forecastle.	
Guns.	Wt. cwt.	Guns.	Wt. cwt.	Guns.	Wt. cwt.
4, 8 in.....	65	16, 32 prs.....	25	4, 32 prs.....	50
26, 32 prs.....	50				

**Weight of broadside, 872 lbs.**

	tons.	cwt.		tons.	cwt.
Powder and shot, guns, } carronades, &c. ....	197	4	Gunner's, boatswain's, } and carpenter's stores	55	0

Boats—1 launch, 2 cutters, 1 barge, 1 pinnace, } 8 tons, 11 cwt., 2 qrs.  
1 jolly boat ... .. }

**PEACE COMPLEMENT—395.**

*Commission officers* (5)—captain, 4 lieutenants. *Warrant* (15)—master, chaplain, surgeon, purser, naval instructor, 4 mates, second master, 2 assistant surgeons, gunner, boatswain, carpenter. *Quarter deck petty* (12)—6 midshipmen, 1 master's assistant, 4 volunteers first class, 1 clerk. *Inferior petty and Lower ratings*, 256. *Boys*, 47. *Marines*, 60, viz. captain and subaltern, non-commissioned officers, fifiers, drummers, and private marines, 58.—Total 395.

**Weight of officers, men, and their effects 45 tons.**

	tons.	cwt.
Hull, when launched.....	1042	12
Total received on board .....	1067	16
When complete—load displacement....	2110	8

Number of men required to build a fourth rate ship in twelve months (in time of peace), 69. To furnish her aloft will occupy 20 riggers for 260 hours. Rate per ton for labour, £4 17s. 5d. Materials, £20 3s. 2d. per ton. Cost of ship's





Oh ! bravely oft, through raging seas,

She bore her gallant crew —

Whether from right, or left, the breeze

Upon the canvas blew ;

Or, prosp'rous to her course, the gale,

Spread full and square the straining sail.



A FRIGATE (new Class) OF 36 GUNS, *as Figured.*

About to tack — masted — hoisted up — showing — Ensign and Pendant



hull, £36,744; masts, yards, rigging, and blocks, £4,611; furniture and sea stores, £9,512. Total expense of ship and equipment, exclusive of provisions, £50,867.

## FIFTH RATE

Includes frigates of 44 guns, as the *Druid*—of 42 guns, as the *Resistance*—38 guns, as the *Belvidera*—and 36 guns, as the *Pique*. Weight of broadside, 742 lbs.—708 lbs.—644 lbs.—648 lbs. Peace complement, 290, 280, 265, and 305.

For the equipment of this rate we take a 42 gun ship (burthen 1,063 tons), which receives on board,

Iron ballast, tanks, water, coals, and wood, 249 tons, 10 cwt.

	tons.	cwt.	qrs.		tons.	cwt.	qrs.
Lower masts and bowsprit..	21	12	3	Rigging and blocks .....	31	8	0
Top masts, yards, caps, &c..	18	12	3	Ship's sails (7,307 yds.)....	3	15	2
Spare top masts, booms, &c.	7	10	2	Spare sails (5,066 yds.)....	2	5	2

8 cables { 3 bowers and 1 stream—hempen } 39 tons, 3 cwt.  
               { 3 bowers and 1 stream—iron }

6 anchors—2 bowers, 1 sheet, 1 spare, 1 stream, 1 kedge, 10 tons, 1 cwt.

Provisions, spirits, and slops, 69 tons, 4 cwt.

*Armament.*

Main deck.			Quarter deck.			Forecastle.		
Guns.	Wt.		Guns.	Wt.		Guns.	Wt.	
	cwt.			cwt.			cwt.	
2, 8 in. ....	50		10, 32 car.....	17		4, 32 .....	39	
26, 32 prs.....	39							

Weight of broadside, 708 lbs.

	tons.	cwt.	qrs.		tons.	cwt.	qrs.
Powder and shot, guns, } carronades, &c..... }	137	15	3	Gunner's, boatswain's, and carpenter's stores }	43	11	0

Boats—1 launch, 2 cutters (if commodore, } 8 tons, 16 cwt., 1 qr.  
               1 barge), 1 pinnace, 1 jolly boat... }

## PEACE COMPLEMENT—280.

*Commission officers* (5)—captain, 4 lieutenants. *Warrant* (14)—master, chaplain, surgeon, purser, naval instructor, 4 mates, second master, 1 assistant surgeon, gunner, boatswain, carpenter. *Quarter deck petty* (11)—6 midshipmen, 1 master's assistant, 3 volunteers first class, 1 clerk. *Inferior petty* and *Lower ratings*, 161. *Boys*, 39. *Marines*, 50, viz. 2 subalterns, non-commissioned officers, fifiers, drummers, and private marines, 48.—Total 280.

Weight of officers, men, and their effects, 27 tons, 3 cwt.

	tons.	cwt.
Hull, when launched ... ..	795	3
Total received on board .....	670	9
When complete—load displacement .....	1,465	12

Number of men required to build a fifth rate ship in twelve months (in time of peace), 60½. To furnish her aloft will occupy 20 riggers for 230 hours. Rate per ton for labour, £.5 11s. 5d. Materials £.20 18s. 5d. per ton. Cost of ship's hull, £.28,163; masts and yards, rigging and blocks, £.3,153; furniture and sea stores, £.7,952. Total expense of ship and equipment, exclusive of provisions, £.39,268.

## SIXTH RATE

Is divided into two principal classes. The first class comprehends *frigates*, as *Vestal*, mounting 26 guns; *razee corvettes*, as *Curaçoa*, mounting 24 guns; and *corvettes*, as *Calypso*, of 20 guns. Weight of broadside, 452 lbs.—384 lbs.—320 lbs. Peace complement, 205—210—185.

The equipment for foreign service of a *razee corvette*, (24 guns) is according to the following scale:

## EQUIPMENT OF A RAZEE CORVETTE.

63

Iron ballast, tanks, water, coals, and wood, 211 tons.

	tons.	cwt.	qrs.		tons.	cwt.	qrs.
Lower masts and bowsprit..	21	5	1	Rigging and blocks.....	31	8	0
Top masts, yards, caps, &c..	18	12	3	Ship's sails (7,381 yds.)....	3	17	0
Spare top masts, booms, &c.	7	10	0	Spare sails (5,140 yds.)....	2	6	0

8 cables { 3 bowers and 1 stream—hempen } 35 tons, 15 cwt.  
               { 3 bowers and 1 stream—iron }

6 anchors—2 bowers, 1 sheet, 1 spare, 1 stream, 1 kedge, 8 tons, 11 cwt.

Provisions, spirits, and slops, 59 tons.

*Armament.*

## Single Deck.

Guns.	Wt. cwt.
24, 32 prs. (medium).....	40

Weight of broadside, 384 lbs.

	tons.	cwt.	qrs.		tons.	cwt.	qrs.
Powder and shot, guns, }	116	8	0	Gunner's, boatswain's, and }	42	10	0
carronades, &c..... }				carpenter's stores .....			

Boats—cutter, barge, pinnace, gig, jolly boat, 3 tons, 17 cwt.

## PEACE COMPLEMENT—210.

*Commission officers* (4)—captain, 3 lieutenants. *Warrant* (13)—master, surgeon, purser, naval instructor, 4 mates, second master, assistant surgeon, gunner, boatswain, carpenter. *Quarter deck petty* (8)—4 midshipmen, 1 master's assistant, 2 volunteers first class, 1 clerk. *Inferior petty and Lower ratings*, 127. *Boys*, 33. *Marines*, 25, viz. 1 subaltern, non-commissioned officers, and private marines, 24.—Total 210.

Weight of officers, men, and their effects, 20 tons.

Hull, when launched.....	698 tons.
Total received on board .....	582
When complete—load displacement.....	1280

The razee corvettes—built as frigates—were before their reduction rated at 36 guns each.

Second class sixth rates include small frigates, as *Andromache*, and *Talbot*, mounting 26 guns; and corvettes, as *Dido*, of 18 guns. Weight of broadside, 252 lbs.—376 lbs.—288 lbs. Peace complement, 210—165—160.

The equipment of a 26 gun ship—the least of the frigate class—is according to the following scale:

Iron ballast, tanks, water, coals, and wood, 151 tons, 5 cwt.

	tons.	cwt.	qrs.		tons.	cwt.	qrs.
Lower masts and bowsprit...	9	2	0	Rigging and blocks .....	23	4	0
Top masts, yards, caps, &c.	8	15	2	Ship's sails (4,796 yds.)....	2	2	3
Spare top masts, booms, &c.	4	2	0	Spare sails (3,322 yds.)....	1	9	3

8 cables { 3 bowers and 1 stream—hempen } 22 tons, 17 cwt.  
               { 3 bowers and 1 stream—iron }

5 anchors—2 bowers, 1 sheet, 1 stream, 1 kedge, 4 tons, 5 cwt., 2 qrs.

Provisions, spirits, and slops, 31 tons, 15 cwt.

#### *Armament.*

Main deck.	Wt.	Quarter deck.	Wt.	Forecastle.	Wt.
_____	cwt.	_____	cwt.	_____	cwt.
Guns.		Guns.		Guns.	
2, 32 prs.....	25	4, 18 prs.....	15	2, 18 prs.....	15
18, 32 prs. car.....	17				

Weight of broadside, 376 lbs.

	tons.	cwt.	qrs.		tons.	cwt.	qrs.
Powder and shot, guns, } carronades, &c..... }	66	4	3	Gunner's, boatswain's, } and carpenter's stores }	23	10	0

Boats—cutter, barge, pinnace, jolly boat, 8 tons, 15 cwt., 3 qrs.

PEACE COMPLEMENT—165.

*Commission officers* (4)—captain, 3 lieutenants. *Warrant* (13)—master, surgeon, purser, naval instructor, 4 mates, se-

cond master, assistant surgeon, gunner, boatswain, carpenter. *Quarter deck petty* (8)—4 midshipmen, 1 master's assistant, 2 volunteers first class, 1 clerk. *Inferior petty*, and *Lower ratings*, 82. *Boys*, 33. *Marines*, 25, viz. 1 subaltern, non-commissioned officers and private marines, 24.—Total 165.

Weight of officers, men, and their effects, 18 tons, 2 cwt.

	tons.	cwt.
Hull, when launched .....	418	17
Total received on board .....	370	11
When complete—load displacement.....	784	8

Number of men required to build a sixth rate ship—burthen 500 tons—in twelve months (during peace), 35½. To furnish her aloft will occupy 20 riggers for 140 hours. Rate per ton for labour, £.7 0s. 4d. Materials, £.24 4s. 1d. per ton. Cost of ship's hull, £.15,611; masts, yards, rigging, and blocks, £.1,509; furniture and sea stores, £.4,434. Total expense of ship and equipment, exclusive of provisions, £.21,554.

#### STEAM VESSELS.

By a regulation made in April 1840, the steam vessels of the Royal Navy are divided into four classes, for stores, machinery, and ordnance.

To the first class, as *Cyclops* and *Gorgon*, captains are appointed; to the second class, as *Rhadamanthus* and *Hydra*, commanders; and to the third class, as *Meteor*, and *Firebrand*, lieutenants and masters.

The *Cyclops*—designed by Sir William Symonds, and built at Pembroke yard, from whence she was launched in 1839—is yet the largest steam vessel in the fleet. She is frigate built, has two masts, ketch rigged, and is propelled by two engines of one hundred and sixty horse power each. Her principal dimensions are as follows—extreme length, 216 ft. 6 in.; breadth of beam, 37 ft. 6 in.; depth of hold, 23 ft.

F



Equipment of stores, provisions, wood, and water, according to her rate and class.

*Engines.*

	ft.	in.		ft.	in.
Diameter of cylinder ....	5	4	Diameter of paddle wheel.	26	0
Length of stroke .....	5	6	Width of wheel .....	8	0

Weight of engines, boilers, and water, 280 tons.

Coals for 25 days, 450 tons—estimated consumption, 15 cwt. per hour.

5 cables—4 bowers and 1 messenger—iron	}	26 tons.
5 anchors—2 bowers, 1 sheet, 1 stream, 1 kedg		

*Armament.*

Built with ports for sixteen 32 pounders.

Her present armament consists of 4, 8 in. prs. on the quarter deck; besides 2, 10 in. prs. (pivot guns), one forward, the other aft, as bow and stern chasers.

Weight of broadside, 472 lbs.

*Boats.*

	length.		length.
First cutter ....	28 ft.	1 Jolly boat.. ...	14 ft.
Second ditto ..	28	First gig .....	24
1 Pinnace .....	32	Second ditto .....	22

PEACE COMPLEMENT—160.

*Commission, Warrant, and Quarter deck petty officers*—the same number as a sixth rate ship, with the addition to warrant officers of 4 engineers, viz. 1 first class, 1 second class, 2 third class. The *Lower ratings* include 22 stokers and coal trimmers, and 3 engineer's boys. *Marine artillery*, 13, viz.

1 subaltern, 2 non-commissioned officers, and 10 privates.—  
Total 160.

Weight of officers, men, and their effects, 18 tons.

Hull, when launched..... 750 tons.

Total received on board ..... 990

When complete—load displacement..... 1,740

The speed of the Cyclops, as proved on her first experimental trial under direction of the Lords of the Admiralty, was found to be about ten knots an hour, or eleven and a half miles in still water; her engines working twenty-one strokes per minute.

Cost of a first class steam vessel, as Cyclops, 1,195 tons burthen: —

Engines and boilers, £.22,662.

Total cost, exclusive of provisions, when armed and equipped for sea, £.54,024.

#### CORVETTES.

CORVETTE (*Corvetto*, from *corvettare*, Ital., to leap or bound), a small ship or vessel mounting all her guns on a single flush deck.

The fine lines and delicate proportions of the corvette at once denote her of Mediterranean origin, but having since her introduction into the British Navy acquired a form of greater stability, with increased capacity for ordnance, she may now be described as a light active vessel, well adapted to share in the minor duties of the frigate class. The quantity of sail, which the corvette is enabled to carry, renders her, as a despatch vessel for long passages, one of the most expeditious.

#### SLOOP CLASS.

SLOOP—in the Royal Navy signifies a vessel of the second class—one, whether ship, corvette, or brig, to which a commander is appointed.

Whence we have the term sloop is not very clear; probably from the oblique or *sloping* sails of the single masted vessels to which this class was formerly restricted. Skinner traces the word slope (itself of doubtful etymology) to the Dutch *slap*, lax; as the curve of a loose rope. "Perhaps," says Johnson, "its original may be latent in *loopen*, Dut., to run." In the fleets of Holland the sloop-rigged vessel is of ancient date; but this genus is now only to be found in the merchant marine.

Before the formation of the sloop class, the sixth rate comprised vessels mounting as few as two guns each. Between the years 1658 and 1675, thirteen of the smallest size were on the official list separated from the rest, and classed as "Sloops."

In 1763, eight *ships* were for the first time admitted among the sloops, and in 1809 brigs of 10 guns were added to the brig-sloop class; but, in 1834, vessels of this low armament were transferred from the second to the third class, commanded by lieutenants.

There are at present in the service—Sloops, as *Nimrod*, mounting 20 guns; broadside, 320 lbs. Peace complement, 130. Sloops of 18 guns, separated into two classes on account of a difference in the distribution or calibre of their guns, or amount of their complements, as *Rover* and *Comus*; broadside alike, 288 lbs. Peace complement, 125—120. Sloops also, as *Pilot* and *Zebra*, mounting 16 guns each; broadside alike, 256 lbs. Peace complement, 115.

The characteristics of the ship and corvette we have already defined; the next diversity in this class is the brig.

BRIG (from *Brigantine*), a vessel with two masts, distinguished by having a square mainsail and a boom mainsail, the latter set nearly in the plane of her keel.

The various good qualities which the brig-sloop is known to possess have long rendered this vessel an especial favourite

with seamen, for although undeniably inferior to both the frigate and razee in speed, those of the largest class are capable of keeping the sea in the roughest weather, stand well under canvas, are safe and easy to manage, carry their guns high out of the water, and have for their size ample stowage for stores and provisions, with good accommodation for officers and men. These vessels are employed on home service as Channel cruisers for the prevention of smuggling, and on foreign stations to protect the British colonial trade.

The equipment of a brig-sloop of the most numerous class, as *Zebra*, 16 guns (average burthen 382 tons), is as follows —

Iron ballast, tanks, water, coals, and wood, 87 tons, 10 cwt.

	tons.	cwt.	qrs.		tons.	cwt.	qrs.
Lower masts and bowsprit..	7	9	2	Rigging and blocks .....	11	10	0
Top masts, yards, caps, &c..	7	3	1	Vessel's sails (3,547 yds.)..	1	11	3
Spare top masts, booms, &c.	3	0	2	Spare sails (2,847 yds.) ....	1	5	2

7 cables { 2 bowers and 1 stream—hempen } 14 tons, 9 cwt.  
               { 3 bowers and 1 stream—iron }

5 anchors—2 bowers, 1 sheet, 1 stream, 1 kedge, 8 tons, 10 cwt., 2 qrs.

Provisions, spirits, and slops, 23 tons, 14 cwt.

### *Armament.*

#### *Single Deck.*

#### Guns on transporting carriages.

	Wt. cwt.		Wt. cwt.
2, 32 prs.....	25	14, 32 prs. car.....	17

Weight of broadside, 256 lbs.

	tons.	cwt.		tons.	cwt.
Powder and shot, guns, } carronades, &c. .... }	46	14	Gunner's, boatswain's, } and carpenter's stores }	18	2

Boats—cutter, barge, pinnace, jolly boat, 2 tons, 11 cwt., 3 qrs.

## PEACE COMPLEMENT—115.

*Commission officers* (3)—commander, 2 lieutenants. *Warrant* (8)—master, surgeon, purser, mate, assistant surgeon, gunner, boatswain, carpenter. *Superior petty officers* (5)—2 midshipmen, master's assistant, volunteer first class, clerk. *Inferior petty*, and *Lower ratings*, 55. *Boys*, 24. *Marines*, 20, viz. 2 non-commissioned officers, private marines, 18.—Total 115.

Weight of officers, men, and their effects, 14 tons, 7 cwt.

	tons.	cwt.
Hull, when launched .....	213	10
Total received on board .....	242	18
When complete—load displacement .....	456	8

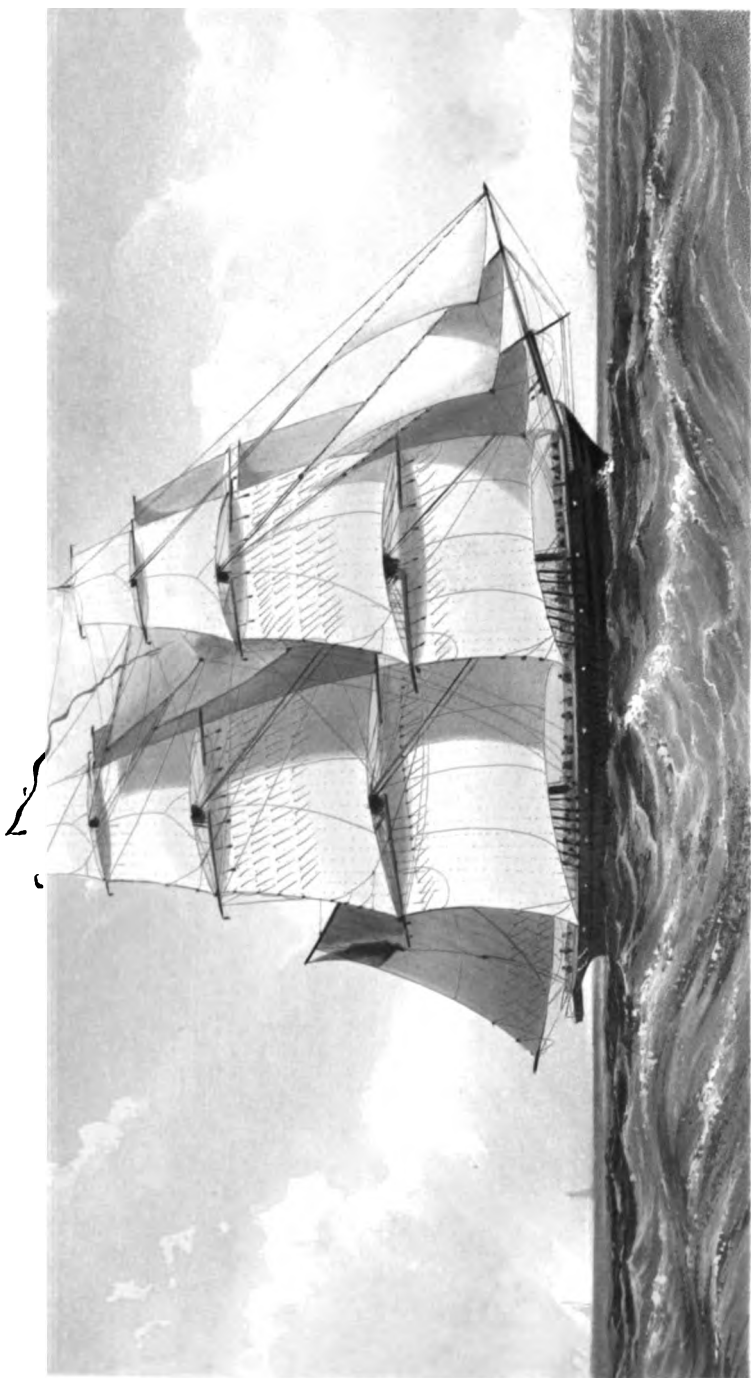
Number of men required to build a 16 gun brig of the above tonnage in twelve months (during peace), 22½. To furnish her aloft, 20 riggers for 105 hours. Rate per ton for labour, £.5 16s. 10d. Materials, £.17 13s. 9d. per ton. Cost of hull, £.8,992; masts, yards, rigging, and blocks, £.1,136; furniture and sea stores, £.3,285. Total expense of vessel and equipment, exclusive of provisions, £.13,413.

**BOMB VESSEL**—a small ship strongly built for the purpose of carrying, besides six or eight guns, two heavy mortars, from which shells may be fired into a town or fortification; or, at low angles, to cover the landing of troops.

Bombs (from the Latin *bombos*, signifying noise) are said to have been invented at Venlo in 1558. *Bomb Vessels*, claimed as the suggestion of M. Reyneau a Frenchman, and first used at the bombardment of Algiers in 1685, appear on the navy list of 1688. The duties assigned to this class in a fleet are such as occasion may demand. Officers of the marine artillery fill the marine department, and bombardiers “their roaring engines ply;” but on the peace establishment they are equipped like



Awakes the breeze — before a fav'ring gale,  
Ruffling the depths of Ocean's secret caves —  
Her canvas wings extend ; with swelling sail,  
She shapes her flying course along the waves.



A SLOOP OF WAR BRIC (New Class) 16 GUNS, 700 TONS

THE SLOOP OF WAR BRIC (New Class) 16 GUNS, 700 TONS





other sloops, and employed on scarcely less hazardous service as surveying and discovery vessels.

#### SMALL VESSELS.

The third principal class—to which are appointed lieutenants and inferior officers—is composed of brigs, brigantines, ketches, schooners, and cutters, mounting from ten to two guns each. Maximum weight of broadside, 90 lbs. ; minimum, 30 lbs. and under. Peace complement, from 60 to 40 men each. These vessels are, when on service, employed as Channel cruisers ; on the coast of Africa for the suppression of the slave trade ; and on other foreign stations. A large proportion of the 10 gun brigs are fitted as packets for the conveyance of the government mails.

BRIG of 10 guns differs in size and armament only from the 16 gun brig of the sloop class.

BRIGANTINE—a species of the brig, from which she is distinguished by having smaller square sails, and masts slightly raking aft.

The name brigantine (of which brig is supposed to have been an abbreviation) is derived from *brigandine*, a light armed vessel, formerly used by brigands and corsairs :

“ A brigandine apply’d  
To fight, lays out her threatful pikes afore  
The engines, which in them sad death do hide.”

KETCH—a small vessel whose fore mast is rigged as that of a brig with square sails, the after mast as that of a schooner with fore and aft sails.

We find that ketches were added to the Navy list in the reign of Charles II. The name is probably a corruption of *hedge* or *kaghe* (Dutch), a small ship. Ketches, never a very

numerous class in the navy, are now nearly extinct, three individuals only remaining—the Arrow, the Sparrow, and the Basalisk.

In the descending scale of equipment, that of a 10 gun brig (average burthen 235 tons) is selected for example.

Iron ballast, tanks, water, coals, and wood, 50 tons.

	tons.	cwt.	qrs.		tons.	cwt.	qrs.
Lower masts and bowsprit..	4	5	2	Rigging and blocks.....	7	1	0
Top masts, yards, caps, &c..	5	15	1	Vessel's sails (2,740 yds.)..	1	4	2
Spare top masts, booms, &c.	2	4	3	Spare sails (1,916 yds.) ....	0	17	1

4 cables { 1 stream—hempen } 8 tons, 17 cwt.  
               { 2 bowers and 1 stream—iron }

4 anchors—2 bowers, 1 stream, 1 kedge, 2 tons, 14 cwt.

Provisions, spirits, and slops, 6 tons, 10 cwt.

#### *Armament.*

##### Single Deck.

	Wt. cwt.		Wt. cwt.
2, 18 prs.....	20	8, 18 prs. car.....	10

Weight of broadside, 90 lbs.

	tons.	cwt.	qrs.		tons.	cwt.	qrs.
Powder and shot, guns, } carronades, &c..... }	15	12	1	Gunner's, boatswain's, and } carpenter's stores..... }	10	9	0

Boats—2 cutters, 1 gig, 1 jolly boat, 2 tons, 1 cwt., 3 qrs.

PEACE COMPLEMENT—60.

*Commission officer* (1)—lieutenant commanding. *Warrant* (3)—mate, second master, assistant surgeon. *Superior petty officers* (2)—midshipman, clerk in charge. *Inferior petty*, and

*Lower ratings, 36. Boys, 10. Marines, 8, viz. 1 non-commissioned officer, and 7 privates. — Total, 60.*

Weight of officers, men, and their effects, 8 tons, 14 cwt.

	tons.	cwt.
Hull, when launched .....	156	8
Total received on board .....	126	6
When complete — load displacement .....	282	14

Number of men required to build a brig of the above tonnage in twelve months during peace, 14½. To furnish her aloft, 20 riggers for 80 hours. Rate per ton for labour, £.5 18s. 9d. Materials, £.19 11s. 9d. per ton. Cost of vessel's hull, £.5,999; masts, yards, rigging, and blocks, £.722; furniture, and sea stores, £.2,075. Total expense of vessel and equipment, exclusive of provisions, £.8,796.

SCHOONER (*Schuner*, Germ.)—a vessel with two masts raking aft, and bowsprit nearly horizontal.

The schooner was little used in our navy before the last American war, when the circumstance of the capture of several privateer vessels of this description, and their extraordinary sailing qualities, caused an augmentation to the fleet, on an improved scantling, of that hitherto unappreciated, though exceedingly useful and economical class.

The singular *rake* or inclination given to the schooner's masts, is intended to keep her head well out of the water when under a press of sail, a precaution which the deep immersion of her hull renders very necessary. In sailing, she steers within five points, or fifty-six degrees of the wind, requiring few but skilful hands to manage her. Attached to a fleet, as a tender or despatch boat, she is placed with the other small vessels at a short distance from the scene of action.

A schooner of 183 tons burthen receives as her equipment for Channel service.

Iron ballast, tanks, water, coals, and wood, 45 tons.

	tons.	cwt.	qrs.		tons.	cwt.	qrs.
Lower masts and bowsprit ..	6	8	0	Rigging and blocks .....	3	17	1
Top masts, yards, caps, &c..	1	18	2	Vessel's sails (2,790 yds.) ..	1	5	0
Spare top masts, booms, &c..	1	3	0	Spare sails (1,750 yds.) .....	0	16	0

4 cables { 1 stream — hempen } 6 tons, 15 cwt.  
              { 3 bowers — iron }

4 anchors — 2 bowers, 1 stream, 1 kedge, 2 tons, 2 cwt., 3 qrs.

Provisions, spirits, and slops, 6 tons, 8 cwt.

#### Armament.

##### Single Deck.

Guns.	Wt. cwt.	Guns.	Wt. cwt.
4, 12 prs. car. ....	6	2, 6 prs. ....	17

Weight of broadside, 30 lbs.

	tons.	cwt.	qrs.		tons.	cwt.	qrs.
Powder and shot, guns, } carronades, &c..... }	7	4	2	Gunner's, boatswain's, } and carpenter's stores }	5	10	1

Boats — cutter, gig, jolly boat, 1 ton, 16 cwt., 3 qrs.

#### PEACE COMPLEMENT — 40.

*Commission officer* (1) — lieutenant commanding. *Warrant* (3) — mate, second master, assistant surgeon. *Superior petty officers* (2) — midshipman, clerk in charge. *Inferior petty*, and *Lower ratings*, 26. *Boys*, 8. — Total, 40.

Weight of officers, men, and their effects, 4 tons, 12 cwt.

	tons.	cwt.
Hull, when launched .....	109	6
Total received on board .....	94	17
When complete — load displacement .....	204	3



Alike when stormy ocean raves,

Or peaceful billows sleep —

“ Her path is o’er the mountain waves,

“ Her home is on the deep.”



*Engraved by J. H. Johnson & Co. N. Y. 1864.*

# MAN-OF-WAR SCHOONER (new Class) 6 GUNS, the *Spitfire* &c.

Getting under weigh Sails loose & Pendant flying





Number of men required to build a schooner, as above in twelve months (during peace), 10½. To furnish her aloft, 20 riggers for 80 hours. Rate per ton for labour, £.5 14s. 2d. Materials, £.19 9s. Cost of vessel's hull, £.4,605; masts, yards, rigging, and blocks, £.370; furniture and sea stores, £.1,380. Total expense, exclusive of provisions, £.6,355.

CUTTER (according to Johnson from *Cut*), a single masted vessel of genuine English construction, whose name is supposed to have originated from the manner in which her wedge-like bow cuts or divides the water. *Cota*, low Lat., a kind of ship, — *vide* Ducange.

This description of vessel differs from all others in the shape and dimensions of her sails, the entire suit, exclusive of spare sails, containing 4,140 yards of canvas! More, by 593 yards, than that of a 16 gun brig of double her tonnage.

The cutter is the only man-of-war allowed to carry a running bowsprit, which is taken in upon deck or "reefed" in graduated proportions as occasion may require, and for each reef of the bowsprit is provided a different sized sail, in all seven — from the largest or fine weather jib, to the smallest or storm jib. The model of a well built cutter is considered to be the highest effort in naval architecture; and for cruising service this class of vessel possesses peculiar and exclusive advantages, steering and putting about with the utmost certainty: never losing her way, she shoots round to her course, and by the time her sails are trimmed, has regained her former speed. In the chase too, when sailing by the wind, the cutter has no equal —

Give her but once *the weather gage*  
She mocks the foaming frigate's rage,  
The baffled brig defies.

Cutters vary considerably in size and tonnage, some measuring nearly 200 tons, others scarcely half that burthen: an

average may however be found in the 10 gun cutter, as Bramble, of 161 tons. Her equipment for Channel service, as follows —

Iron ballast, tanks, water, coals, and wood, 38 tons, 5 cwt.

	tons.	cwt.	qrs.			tons.	cwt.	qrs.
Main mast, bowsprit, and boom	5	9	2	Rigging and blocks	.....	3	13	0
Top mast, gaff, and yards, spare				Vessel's sails (4,140 yds.)	.....	1	17	0
gear, &c.....	2	12	0	Spare sails (569 yds.)	.....	0	5	1

4 cables — 3 bowers and 1 stream — iron, 3 tons, 9 cwt.

4 anchors — 2 bowers, 1 stream, 1 kedge, 1 ton, 7 cwt., 3 qrs.

Provisions, spirits, and slops, 3 tons, 2 cwt.

#### Armament.

##### Single Deck.

Guns.	Wt. cwt.
10, 6 prs.....	17

Weight of broadside, 80 lbs.

	tons.	cwt.			tons.	qrs.
Powder and shot, guns,	} 6	9	Gunner's, boatswain's, and	} 5	10	
carronades, &c.....			carpenter's stores.....			

Boats — cutter, gig, jolly boat, 1 ton, 13 cwt., 3 qrs.

PEACE COMPLEMENT — 40.

*Commission officer* (1)—lieutenant commanding. *Warrant* (3) — mate, second master, assistant surgeon. *Superior petty officers* (2)—midshipman, clerk in charge. *Inferior petty*, and *Lower ratings*, 26. *Boys*, 8. — Total, 40.

Weight of officers, men, and their effects, 2 tons, 15 cwt.

	tons.	cwt.
Hull, when launched ... ..	82	7
Total received on board .....	76	8
When complete — load displacement .....	158	15



No ship that roams the ocean wide,  
No bark that stems the rushing tide,

The daring Cutter can outvie ;

When storms and adverse winds prevail,  
Still closer draws her vent'rous sail,  
In the wind's eye.



A MAN OF WAR CUTTER OF 10 GUNS. *as Bramble, &c.*

Sailing by the wind, on the larboard tack. Fus. on and fore-and-aft.



Number of men required to build a cutter of 161 tons, in twelve months (during peace),  $8\frac{1}{2}$ . To furnish her aloft, 20 riggers for 30 hours. Rate per ton for labour, £.5 8s. Materials, £.19 6s. 5d. per ton. Cost of vessel's hull, £3,980; masts, yards, rigging, and blocks, £.522; furniture and sea stores, £.1,368. Total expense of vessel and equipment, exclusive of provisions, £5,870.

**TENDER**—a vessel of the third class, allowed to a commander-in-chief of a fleet, or a port; or to any of Her Majesty's yachts.

Mention is made of tenders to the fleet in the reign of Henry the Sixth, when the Parliament of 1442 represented the necessity of keeping an armed force upon the sea, and demanded of the State eight great ships and four small spynes or pinnaces; and that besides these, there should be *attendant* upon each great ship a barge carrying eighty men, and a balynger manned with forty.

The duties of the tenders are altogether regulated by the commander-in-chief, under whose orders they are placed. They are supplied with stores and provisions from the flag ship—of whose complement their officers and crew also form a part; consequently any capture or seizure made by a tender is shared with the rest of the officers and company of the ship to which she is attached.

**LIGHTER**—a small single masted vessel generally employed, in charge of a warrant or petty officer, to convey stores and provision on board the ships and vessels of the fleet, or from one naval establishment to another. Of this class, the Rochester measures 154 tons, but the average burthen is 106 tons.



## NAVAL RESOURCES.

In addition to the foregoing computations of individual force, we give the following interesting particulars from a report made by the Commissioners of Woods and Forests towards the close of the last war, but equally applicable to the present period.

Taking the tonnage of the Royal Navy at 776,087 tons, it would require at  $1\frac{1}{4}$  load to a ton, 1,164,085 loads to build such a navy; and supposing the average duration of a ship to be fourteen years, the annual quantity of timber required would be 83,149 loads, exclusive of repairs (27,000 loads), making the total 110,000 loads; and this it is stated would be sufficient annually to support, at the above named estimate, the whole British Fleet, including ships of war of all sizes, but which may be taken as an equivalent together to twenty 74 gun ships; these, one with another, containing about 2,000 tons each, would require, at  $1\frac{1}{4}$  load to the ton, 3,000 loads of timber, making the expenditure for twenty such ships 60,000 loads. Now it is judged, that not more than forty oak trees can stand upon an acre of ground so as to grow to a full size, or to contain each a load and a half of timber, fifty acres would therefore be required to produce a sufficient quantity of oak to build a 74 gun ship—one thousand acres for twenty ships: and as the oak takes at least a hundred years to arrive at maturity, one hundred thousand acres would be required to keep up a supply for maintaining a navy of 800,000 tons.

But assuming 400,000 as the average tonnage of the navy, and the duration of a ship to be the moderate period of  $12\frac{1}{4}$  years, there should be an annual supply of 32,000 tons, or 48,000 loads. The building of a 74 gun ship consumes about 2,000 oak trees; the quantity of timber therefore necessary for the construction

of a seventy-four, will occupy fifty-seven acres of land, and the annual demand will be the produce of eleven hundred and forty acres to meet the consumption of the entire fleet: yet large as this may seem, it is little more than twenty-one acres for each county in England and Wales.

To supply the deficiencies of latter years in the home growth of timber, we have had recourse to the Baltic, America, and to India, whose valuable teak wood is not liable to corrode iron or other metallic substances, and is impervious to the dry rot, and the attacks of the worm. Such stores of hemp, canvas, pitch, tar, iron, copper, tallow, as are not obtained from the United Kingdom and her colonies, are made up from the foreign marts — Russia, Denmark, Sweden, and South America.

Let India boast her plants, nor envy we  
The weeping amber and the balmy tree,  
While, by our oaks, the precious loads are borne,  
And realms commanded which those trees adorn.

POPE.

## COMPARATIVE DIMENSIONS OF SHIPS AND VESSELS.

### OLD AND NEW CLASS.

	Guns	Length of Deck.		Keel for Tonnage.		Breadth extreme.		Height of Portsills.		Burthen
		ft.	in.	ft.	in.	ft.	in.	ft.	in.	tons.
First rate ..... of	120	205	0	170	11	54	5	5	6	2,602
New, as <i>Queen</i> .....	110	204	0	165	5	60	0	...	...	3,099
Second rate .....	84	196	1 $\frac{1}{2}$	161	11 $\frac{1}{2}$	52	0 $\frac{1}{2}$	6	1	2,279
New, as <i>Vanguard</i> .	80	190	0	155	3	59	6	...	...	2,609
Third rate .....	72	176	0	145	1	48	2	5	8	1,741
New, as <i>Boscawen</i> ..	70	180	0	146	8	54	0	...	...	2,212
Fourth rate .....	50	172	0	144	9	44	2	7	10	1,468
New, as <i>Vernon</i> .....	50	173	0	144	6 $\frac{1}{2}$	52	8 $\frac{1}{2}$	9	0	2,082
Fifth rate, <i>Castor</i> .....	36	159	0	129	0	43	0	7	8	1,293
New, as <i>Pique</i> .....	36	160	0	131	0	48	8	8	10	1,632
Sixth rate .....	26	113	8	94	8 $\frac{1}{2}$	31	10	4	11	500
New, as <i>Cleopatra</i> .	26	130	0	106	10	40	0	6	4	988
Corvette .....	18	112	0	92	1 $\frac{1}{2}$	30	10	4	11	456
New, as <i>Dido</i> .....	18	120	0	99	5 $\frac{1}{2}$	37	6	...	...	734
Brig. ....	16	100	0	77	3 $\frac{1}{2}$	30	9	4	9	382
New, as <i>Pilot</i> .....	16	105	0 $\frac{1}{2}$	84	0	33	6 $\frac{1}{2}$	...	...	492
Brig. ....	10	90	0	73	7 $\frac{1}{2}$	24	8	4	4	235
New, as <i>Alert</i> .....	10	95	0	74	10	30	4	...	...	358
Schooner, as <i>Spider</i> ...	6	80	0	64	5 $\frac{1}{2}$	23	2	3	5	183
Cutter, as <i>Bramble</i> ...	10	67	3	51	4	24	5	3	2	161
Lighter, as <i>Rochester</i> .	...	68	6	54	10	23	3	...	...	154

### STEAM VESSELS.

320 horse power\*—See Cyclops, page 65.

	Length.	Keel.	Breadth.
140 horse power,	150 ft.	128 ft. 0 in.	32 ft. 9 in.
100 ditto,	145 ft.	125 ft. 6 in.	28 ft. 5 in.

\* The standard of a horse's power, as used to represent the power of machinery, is thus defined by Watts—he can raise a weight of 32,000 lbs. to the height of one foot in a minute. Desaguliers and Smeaton considered the force of one horse equal to that of five men.

## CIVIL DEPARTMENT OF THE NAVY.

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Under this branch of the service — first in importance is the

### ADMIRALTY OFFICE.

The administration of the office of Lord High Admiral, as now in commission, devolves upon six Lords Commissioners, or rather on one Lord Commissioner and five colleagues. The first lord taking his place in the Cabinet as the representative of the Naval Service, to him are referred all naval questions brought under discussion, as also every claim or application on the same subject addressed to the Monarch in Council.

The powers, civil and military, vested in the Board of Admiralty are very extensive, embracing whatever relates to the management and sustentation of the naval and marine forces, the economy and control of home and foreign establishments and stations, the amount of ships and vessels to be built, repaired, fitted for sea, or kept in ordinary, with the number of officers, seamen, and marines annually employed in the fleet, or retained on shore in the service of the Navy.

An estimate of the sums required to meet the expenses of the Naval department, is prepared and laid before Parliament every year by the Secretary of the Admiralty, who, on that

account, and for the purpose of taking an explanatory part in the discussion usual on the occasion, must himself be a member of the House.

<i>Salaries of the Lords Commissioners of the Admiralty.</i>		<i>Salaries of the principal Officers.</i>	
	Per Ann.		Per Ann.
First Lord .....	£4,500	Surveyor of the Navy.....	} £1,000
Four Lords—each .....	1,000	Accountant General.....	
One Lord .....	1,200	Storekeeper General.....	
		Comptroller of Victualling and Transports.....	
First Secretary .....	2,000	Physician General.....	} 950
Second Secretary.....	1,500	Comptroller of steam ma- chinery, and of the packet service .....	
Private Secretary to First Lord..	500		

There are in the department of the secretary, clerks at salaries varying from £.850 to £.100 per annum, thirty six; and in the department of the five principal officers, clerks at salaries varying from £.800 to £.90 per annum, one hundred and sixty-eight, of whom seven are stationed at the Ports. Besides these, are employed a chief assistant and draftsman to the surveyor, at £.600, and three draftsmen, at salaries from £.400 to £.150 per annum; an officer of engineers for superintending naval works, buildings, and machinery at home and abroad, £.707 per annum; a chief assistant and draftsman to the civil architect, draftsman to ditto, salaries £.450 and £.200; French and Spanish translator, £.100 per annum. Total amount of salaries (Lords Commissioners and principal officers inclusive), as per estimate for the year ending 1841, £.83,289.

The salaries and wages of messengers, artisans, police officers, porters, watchmen, and other persons employed on the establishment, with the charges for repairs, postage, stationery, and miscellaneous disbursements, as stated in the estimates for Whitehall and Somerset House, year ending 1841, £.30,838 6s. 4d.

## JUDICIAL DEPARTMENT.

The High Court of Admiralty, in virtue of the office of Lord High Admiral in commission, exercises a criminal as well as civil jurisdiction. The judge of this Court is a doctor of the civil law, and according to the practice of that law are its proceedings conducted; but all criminal cases relating to piracies and other capital offences committed on the seas, are tried according to the common law of the land, by witnesses and a jury.

For the due enforcement of maritime enactments, and for determining the legality of captures and seizures made by Her Majesty's ships and vessels abroad, the Board of Admiralty appoint to several of the islands and British settlements vice-admiralty courts and prize jurisdictions—from whose decisions however an appeal lies to the High Court of Admiralty at home.

Expenses of the judicial department for salaries, fees, disbursements of solicitor in law suits, &c., as per estimate for the year ending 1841, £.7,968 13s. 8d.

Total for Admiralty office £.122,096.

## OFFICE FOR THE REGISTRY OF MERCHANT SEAMEN.

The project for registering merchant seamen originated with France, and was first put in practice at the port of Rochfort, where, in 1680, the seamen (60,000 in number) were divided into three classes, which were to serve alternately, one-third being allotted to the king's ships, another third to the trading vessels—the remaining third were left at their own disposal until called into service.

Our system of enrolment (established by act 5 and 6 Will. IV, c. 19), without the necessity of such a classification,

and divested of all compulsory measures, holds out to the British sailor advantages, in the event of employment in the Royal Navy, which must, for the future, render the manning of the fleet more speedy and certain than heretofore.

Expenses of the Registry Office for the year ending 1841, £2,980.

From a return made by the Registry Office to an order of the House of Commons, dated 14th February 1840, it appears that the number of apprenticed seamen registered at the several ports of the United Kingdom, from the 31st of July 1835—when the Act came into operation—to the 18th of February 1840, amounted to 27,722; from which, deducting 3,374 for casualties ascertained, and indentures expired, there remained of registered sea apprentices, 24,348.

The number of *registered* seamen serving in British vessels, 202,160.

#### MANNING THE FLEET—IMPRESSMENT.

Under the Saxon monarchs it was the bounden duty of the ports in Kent and Sussex, as commanding the passage of the narrow seas, to promote the naval strength of the kingdom by contributions of ships and men. The coast fisheries also supplied their quota—a hardy, active race; and the needy mariners of other shores flocked eagerly to serve beneath the English flag: but as commerce increased, the merchant trade so completely engrossed the sea-bred population, that even the king's occasional levies for war service could with difficulty be obtained. Then it was that a system, supported by *custom* from as far back as our records extend, became by *law* established—the first commission *for the impressment of seamen for the king's service*, bears date 29 Edward III, 1355. After this, at different periods, and particularly during the last wars, in consequence of the high wages given by the merchants, and

the scarcity of seamen, impressment was carried to a very great extent in the fleet; but the numerous exemptions obtained by successive Acts of Parliament have tended to abate the rigor of this severe, but sometimes necessary exaction.

The following description of persons are by various Acts of Parliament protected from impressment:—

Masters of merchant ships or vessels—first mates of such as are 50 tons burthen or upwards—boatswains and carpenters of such as are 100 tons or upwards—men belonging to vessels and craft of all kinds in the employment of navy, victualling, ordnance, excise, and post offices, and the customs—watermen belonging to the insurance offices within the cities of London and Westminster—all men of the age of fifty-five years or upwards—youths under eighteen—all foreigners—apprentices not having used the sea before the date of their indentures, and not more than three years from said date—landmen not having served at sea full two years—the number by law allowed of masters, apprentices, and seamen, and one landman of all fishing vessels—harpooners, line managers, and boat scullers of the Greenland fishery, and the Southern whale fishery, and all seamen and common mariners who have entered for those fisheries.

No person whatsoever can be impressed, except by an officer who is duly empowered and intrusted with a press warrant.

#### SCIENTIFIC BRANCH.

The liberal annual grant for scientific purposes is distributed among the several departments, for the year ending 1841, in the following proportions:—

	£.
Royal Observatory Greenwich ( <i>expense of establishment</i> ) .....	3,007
Observatory, Cape of Good Hope ( <i>ditto</i> ) .. .....	1,535
Nautical Almanac ( <i>publication of</i> ) .. .....	3,200
Chronometers ( <i>purchase and repairs of</i> ) .. .....	1,500



Rewards for experiments, &c. ( <i>in naval arts or science</i> ) .....	£.1,000
Libraries and Museums, at Haslar and Plymouth hospitals...	100
Hydrographical department ( <i>surveys, charts, &amp;c.</i> ) .....	17,813
Royal Naval College, Portsmouth ( <i>establishment</i> ) .....	1,442

Total for Scientific Branch, £.27,433.

#### NAVAL ESTABLISHMENTS.

It must ever be an object of the most anxious consideration, that the naval stores of this country should be fully adequate not only to present demand, but that a sufficient stock of the least perishable materials be kept in reserve to provide against fluctuating prices, and the occasional scarcity of home produce, or the possible delay or withdrawal of foreign supplies. For this purpose, and also to secure in commanding or commodious situations, building yards for the ships and vessels of the fleet, and rendezvous for British officers and seamen detached on service ashore, or temporarily invalided, the naval establishments at home and abroad have been founded; nor is it less the aim of Government to uphold and cherish by means of those extensive channels of communication the interests of the commercial navy, on whose prosperity in truth is based that of the whole nation.

The Naval Establishments are fifty-two in number, *viz.*

#### *Her Majesty's Establishments at Home.*

NAVAL YARDS.	{ Deptford, Woolwich, Chatham, Sheerness, Portsmouth, Plymouth, Pembroke, Deal, North Yarmouth.
PACKET ESTABLISHMENTS.	{ Dover; Weymouth; Hobbs' Point, and Waterford; Holyhead; Liverpool, Dublin, and Kingstown; Port Patrick, and Donaghadee.
VICTUALLING ESTABLISHMENTS.	{ Deptford; Royal Clarence, Weevil; Royal William, Cremill; Haulbowline.

MEDICAL ESTABLISHMENTS.— Haslar Hospital, Plymouth Hospital.

TRANSPORT ESTABLISHMENTS. — Deptford, Leith.

MARINE BARRACKS } Woolwich, Chatham, Portsmouth, Plymouth.  
 ,, INFIRMARIES. }

YEAR ENDING 1841. { Expenses of establishments at home... £.122,236 }  
 { Wages to artificers, &c..... £.700,253 } £.822,489

*Her Majesty's Establishments Abroad.*

NAVAL YARDS. { Gibraltar, Malta, Canada, Halifax, Bermuda, Anti-  
 gua, Jamaica, Cape of Good Hope, Trincomalee,  
 Bombay.

VICTUALLING { Malta, Halifax, Bermuda, Jamaica, Ascension,  
 ESTABLISHMENTS. { Sierra Leone, Rio de Janeiro.

MEDICAL ESTABLISHMENTS.— Malta, Halifax, Bermuda, Jamaica.

YEAR ENDING 1841. { Expenses of establishments abroad ..... £21,010 }  
 { Wages to artificers, &c..... £49,974 } £.70,984

NAVAL YARDS.

How little thought of are the labouring hands,  
 That in those vast enclosures daily ply  
 Their various toil, and from a shapeless mass  
 The rude materials fashion, and convert  
 To forms of perfect mould. Here the cast ball,  
 The pond'rous anchor, and the well wrought chain,  
 Tall mast, and sail, and cable, and — not least,  
 Mighty leviathan of human art!  
 The Royal ship is framed : with iron bound,  
 And ribs of solid oak, she launches forth,  
 Complete — full freighted, furnish'd, arm'd, equipp'd.

Naval yards are extensive grounds appropriated to the construction, fitting out, and repairing of the ships and vessels of the fleet, having building slips, wet and dry docks, mast ponds, wharfs, timber sheds, manufactories, sail and rigging lofts, mast houses, boat houses, and store houses for the

shelter, preservation, and assortment of the different materials employed therein.

The superintendents of the naval yards were formerly styled Commissioners of dock-yards, the persons holding those situations as civil appointments, but by the regulations of June 1832, the venerable *Docks* assumed, with the new title of *Royal Naval Yards*, a military character, having thenceforth admirals or captains in commission presiding over them. Where there is no superintendent, the commander-in-chief of the station is to conform to the general practice of the service, transacting such duties as may devolve to him, in conjunction with the store keeper or other person entrusted with its management.

Portsmouth and Plymouth have each an admiral superintendent who receives full pay and allowances as a rear-admiral. Woolwich, Chatham, and Sheerness have captains superintendent, who receive in addition to their pay and allowances as captains of third rate ships—the two first, £.360 per annum, the last £.200: the superintendent of Pembroke, in addition to his pay as captain of a yacht, £.200 per annum. Deptford yard is placed under the control of the captain superintendent of the victualling yard, who receives £.900 per annum. The superintendent at Deal, in addition to his half-pay as commander, £.150 per annum. North Yarmouth is in charge of a clerk.

After the admirals and captains superintendent, the principal officers and persons permanently employed in the naval yards are of the following denominations:—masters attendant, at salaries from £.650 to £.380 per annum; assistants to masters attendant, £.380 to £.300 per annum; master shipwrights, £.650 to £.600 per annum; assistants to master shipwrights, £.400 per annum; chief engineer at Woolwich, £.650; and his assistant £.350 per annum; store keepers, £.600 per annum; store receivers, £.600 to £.300 per annum;

harbour master at Plymouth, £.450 per annum; surgeons, £.500, and one at £.400 per annum; assistant surgeons, £.200 per annum; chaplains, one at £.500, the others at £.350 per annum; timber convertors, £.300 per annum; boatswains, £.250 to £.200 per annum; warden at Plymouth, £.200 per annum; lieutenants, directors of police, £.250 per annum; clerks, first and second class, £.300 to £.80 per annum.

There are also employed, at salaries varying from £.260 to £.85 per annum—masters and leading men of the different trades; conductors of wood mills, lead mills, saw mills, &c.; foremen of the yards, foremen of the storehouses and manufactories; assistants, measurers, and inspectors of work; besides whom, are the artificers, workmen, and labourers daily employed at the several establishments.

#### DEPTFORD YARD,

In Kent, distant four miles and a half from London, situated on the South side of the river Thames above Greenwich, from which it is divided by the Ravensbourne or Lee.

This Royal yard, named first in the official returns, though not the largest, is in conjunction with the victualling a fine establishment. The docks were built by Henry VIII, who otherwise distinguished Deptford with marks of peculiar favour\*.

\* This monarch, in 1515, incorporated the hospital called Trinity House, Strond, which contains twenty-one houses for decayed pilots, and masters of ships, or their widows. Trinity Hospital, a more modern structure, is an extension of the same institution, and contains thirty-eight houses.

By the charter of the old hospital, the brethren of the Trinity hold their corporation established for the promotion of commerce and navigation; they have the power of making regulations for pilots and granting them licences, ordering the erection of beacons and light-houses, with many other valuable privileges attached to the society, whose revenue, it is said, exceeds £.140,000 per annum.

Here, in 1581, Queen Elizabeth visited Captain Francis Drake on board his famous ship the Pelican, and with her own hand conferred on the enterprising circumnavigator the honour of knighthood.

The following is an abstract (from the naval estimates for 1840—1) of the *expenses of the establishment*, including rent, taxes, salaries to officers, and other persons permanently employed therein; *wages* to shipwrights, artificers, labourers, and others temporarily employed; *new works*, repairs, and alterations in the yard.

	Expenses of Establishment.	Wages.	New Works, Repairs, &c.	Total.
Year ending 1841. }	£2,581 .....	3,000 .....	5,800 .....	£11,381

#### WOOLWICH YARD,

In Kent, eleven miles east of London, is situated on the south side of the river Thames.

The past and present fame of Woolwich as a naval yard and arsenal invests it with a more than common interest. It is styled by the learned Camden, "the mother dock;" and Bishop Gibson supposes it to have been the first built in England, men-of-war having been constructed there early in the reign of Henry VIII. From this ancient dock, which was honoured on the occasion by the Queen and all her Court, was launched in 1559 "the goodlye ship Elizabeth," and in 1637 Woolwich yard sent forth that paragon of its times, the Sovereign of the Seas.

Besides its spacious docks, this yard is provided with an extensive manufactory for the construction of steam machinery, and at the east end of the town is the Royal Arsenal, in which are large magazines of cannon, mortars, shells, shot, and other warlike stores; a foundry for cast-

ing brass guns, and a laboratory for carrying on various operations and processes connected with the ordnance, whether experimental or for actual service.

	Expenses of Establishment.	Wages.	New Works, Repairs, &c.	Police.	Total.
Year ending 1841. }	£.10,774 .....	46,500 .....	64,000 .....	1,799 .....	£.122,073
Steam Manufactory. }	£. 1,460 .....	10,000 .....			£. 11,460

## CHATHAM YARD,

In Kent, thirty miles east of London, is situated on the eastern bank of the river Medway.

This yard, which extends upwards of a mile along the margin of the river, contains immense magazines furnished with all kinds of naval stores. It was originally founded by Queen Elizabeth on the site now occupied by the gun wharf, and consisted of but one small dock. From this confined spot James II, who caused new docks to be built, in 1622, removed the whole establishment to its present well chosen situation.

Both in former and latter years ships of the largest class have been here constructed, among which Lord Nelson's favourite and *last* ship, the *Victory*, is worthy of record.

The following instance of dock-yard expedition is preserved by Derrick from the account of Captain Phineas Pett, who, in 1604, was ordered by the Lord High Admiral to build in all haste a vessel, for the young prince Henry to disport himself in, above London Bridge, her garniture to be like that of the *Ark Royal*, battlement-wise, her length of keel twenty-eight feet, her breadth twelve feet. Mr. Pett thus notes the progress of this little ship: "I laid her keel 19th January, and launched her 6th March following; set sail with her the 9th, and anchored right against the Tower, before the King's

lodgings, His Majesty then lying there before his riding through London, (thus in fifty-four days the vessel was built, launched and equipped). On the 22d, the Prince, with the Lord High Admiral, &c. &c. came on board, when we weighed, and dropped down as low as Paul's wharf, where we anchored; and then His Grace with a great bowl of wine christened the ship, and called her by the name of the "Disdain."

	Expenses of Establishment.	Wages.	New Works, Repairs, &c.	Hire of Teams.	Police.	Total.
Year ending 1841.	} £.16,017	.... 75,000	.... 4,000	.... 1,502	.... 2,687	..... £.99,206

#### SHEERNESS YARD,

In Kent, distant from London forty-six miles, situated on the N.W. point of the Isle of Sheppey, at the mouth of the main branch of the river Medway.

This dock-yard, which was built in the reign of Charles II, and intended merely for the repairs of fifth and sixth rates, has since the peace undergone considerable alterations and enlargement, so that nine sail of the line may now upon emergency be completely equipped for sea at the same time: a great number of the largest class ships have been docked and repaired here since the re-opening in 1823.

	Expenses of Establishment.	Wages.	New Works, Repairs, &c.	Hire of Teams.	Police.	Total.
Year ending 1841.	} £.10,916	.... 56,000	.... 4,038	.... 455	.... 2,145	..... £.73,554

#### PORTSMOUTH YARD,

Island of Portsea, in Hampshire, distant seventy-two miles south-west of London, is situated on the sea-coast between Chichester and the harbour of Portsmouth.

The spacious docks, ample store houses, curious and valuable steam machinery, and works of naval art which furnish

this yard, are gratifying evidences of the extension of our foreign commerce and national industry.

Portsmouth now claims, on the authority of recent researches, a higher antiquity than even that of "the mother dock," in confirmation of which is quoted a *precept* issued by King John to the Sheriff of Southampton, wherein he commands the docks at Portsmouth to be enclosed by a good and strong wall, for the preservation of the "shippes and galies." In the reign of Henry VIII, the old dock-yard which had fallen into decay, was repaired with considerable additions; and hence the common but erroneous statement, that this monarch was the founder. In 1650 there was no mast house, nor above one hundred shipwrights in the yard; in 1655 the first dry dock was built. Soon after the Restoration, Charles II, when improving the military defences of Portsmouth, caused several new docks to be made, and erected forts, which were further strengthened by his successor.

The harbour and town of Portsmouth have at different times suffered severely by fire—the town was burned down in 1265; again, by the French, in 1377; the docks were consumed 1760; again July 27, 1770; and again December 1776.

The extent of this Royal yard, and its paramount utility as a great naval depot, justifies the following expenditure—

	Expenses of Establishment.	Wages.	New Works, Repairs, &c.	Hire of Teams.	Police.	Total.
Year ending 1841.	£20,509	114,000	23,200	1,125	2,898	£161,733

PLYMOUTH YARD,

Adjoining the town of Devonport in Devonshire, distant from London two hundred and seventeen miles, and two miles west of the town of Plymouth, is situated upon the western branch of the harbour called Hamoaze, at the mouth of the river Tamar.



Plymouth yard was commenced in the reign of William and Mary, 1691 ; and in 1693 an additional sum of money was voted by Parliament for its completion ; previous to this, the master shipwrights and artificers were lodged in a ship of war fitted for the purpose.

The docks, accounted the finest in the world, are excavated through a mine of slate, and lined with Portland stone ; a capacious basin within the yard is sufficiently large to admit ships of the line to float while fitting out or in course of repair, and the building slips and wharfs are of commensurate proportions. The inroads of time and the progressive improvements in naval architecture have caused, with some alterations, frequent additions to the original establishment. The grant on the estimates of the last and present year provides funds for constructing a pier in such a manner as to form part of another basin to be made here, and also for the erection of upright and circular saw mills, and a fan-bellows (its cost £.2,000) for the smithery.

	Expenses of Establishment.	Wages.	New Works, Repairs, &c.	Hire of Teams.	Police.	Total.
Year ending 1841.	} £.20,620	.... 121,000	.... 39,500	.... 1,252	.... 2,688	.... £.185,060

#### PEMBROKE YARD,

In Pembrokeshire, Wales, distant from London two hundred and fifty miles, is situated on the southern shore of Milford Haven ; the best harbour in the British islands, and capable of sheltering in safety the whole navy of England.

The advantage likely to accrue to the service from having a naval establishment thus admirably situated, induced the Lords Commissioners of the Admiralty, during the last war, to propose to Parliament, and obtain a grant for building here a naval dock-yard ; nor was the anticipation unrealized, the number of ships and vessels of every description which thi

active department has already furnished to the fleet proves, to the lasting credit of its projectors, the judgment and foresight of the design.

Pembroke yard, to which every year adds some new and essential improvement, occupies an area of sixty acres, descending in a gradual slope to the edge of the water, on the verge of which are the building slips and docks; those most recently completed being for the purpose of adapting it more expressly for the construction of steam vessels, of which *Cyclops* and *Gorgon*, first class steam frigates, are highly creditable specimens.

	Expenses of Establishment.	Wages.	New Works, Repairs, &c.	Hire of Teams.	Police.	Total.
Year ending 1841.	£.7,125	.... 35,000	.... 18,561	.... 1,132	.... 1,163	..... £.62,981

DEAL, — NORTH YARMOUTH,

Are minor establishments, used chiefly as repositories for naval stores.

DEAL, in Kent, seventy-three miles south east of London, is situated on the sea-shore, between the North and South Foreland, a coast celebrated for its intrepid and excellent pilots.

	Expenses of Establishment.	Wages.	Hire of Teams.	Watchmen.	Total.
Year ending 1841.	£.275	..... 500	..... 15	..... 91	..... £.881

NORTH YARMOUTH, in Norfolk, one hundred and twenty-four miles north-east of London, is situated at the mouth of the river Yare, and twenty-three miles east of Norwich.

Year ending 1841.—Total Expenses of Establishment, £.30

Hire of hoys at the several yards, £.4,757.

Expenses of the nine naval yards at home, £.733,116; and of the ten naval yards abroad, expenses of establishments, wages, new works, and repairs, £.48,650.

Total for naval yards, £.781,766.

#### NAVAL STORES.

The sum voted on the year's estimates for the purchase of timber, stores, and other materials for building, repairs, and outfit of the fleet, including £.160,000 for the purchase and repair of steam machinery, and sundry incidental charges, as freight, &c., £.1,038,666.

#### PACKET ESTABLISHMENTS.

The expenses of the six establishments, including wages at the packet station Holyhead, £.7,272.

#### PACKET SERVICE,

Principal station, Falmouth,

Under direction of the Admiralty, is conducted by six resident naval agents, *viz.* a captain superintendent, £.600; five commanders, each £.300; and one lieutenant, £.150, per annum. This department of the service gave employment, in the year 1840—1, to lieutenants and masters, commanding, 96; warrant officers, not commanding, petty officers, seamen, landmen, and boys, 2,283: annual pay of the whole, £.106,659.

Total for packet establishments and service, £.113,931.

#### HIRED PACKETS.

Sum voted on the year's estimates for the hire and contingent expenses of sailing and steam vessels, to convey the

Government mails from London, Falmouth, Liverpool, Kingstown, Aberdeen, and Lerwick, to the several packet stations abroad, £.118,536.

## VICTUALLING ESTABLISHMENTS.

Extensive store houses and manufactories, situated near the principal naval yards, for the convenience of supplying the outfitting ships and vessels of the fleet with victualling stores and provisions; and for transmitting, on demand, the appointed supplies to other departments of the naval service.

At present all the bread, beer, and vinegar required for the consumption of the fleet is manufactured at the victualling yards; besides which, these establishments receive into store, and prepare for shipment, various other articles and species of provisions. The bread manufactory at Deptford, where the process of making biscuits employs an engine of eight horse power, is well worthy of inspection.

At three of the victualling yards are captains superintendent, annual salaries, £.800; and an agent victualler at Haulbowline, £.300 per annum. The other persons employed in the several establishments, include masters attendant, store keepers, clerks, master coopers, master millers, master bakers, foremen of store houses, inferior workmen, and labourers.

The expenses of the four victualling establishments at home, for the year ending 1841, £.56,250; and expenses of the seven victualling establishments abroad, £.14,267.

Total for victualling establishments, £.70,517.

## PROVISION STORES.

Sum voted on the estimates for the purchase of one year's victualling stores and provisions for the service afloat (31,310 individuals, including 5,500 marines and 2,000 boys). Total £.602,610.

**MEDICAL ESTABLISHMENTS**

Comprise the naval hospitals at home and abroad; and other places at different ports of the United Kingdom, denominated sick quarters, appointed for the reception and temporary subsistence, care, and surgical treatment of officers and men sent from their ships, for wounds or hurts received, or contagious diseases, or illness contracted in the service.

From the principal departments, Her Majesty's ships and vessels are supplied, according to class and rate, with the regulated proportion of medical stores.

The two institutions, Haslar and Plymouth, are under the direction of the captains superintendent of the adjacent victualling yards at Wevil and Cremill; and at each of the hospitals are two lieutenants inspecting, annual salaries £.320. There are also on the establishments, inspectors and deputy inspectors, chaplains, medical store keepers, hospital mates, and others in the various minor employments of this department.

Expenses, for the year ending 1841, of the two hospitals at home, £.15,436; and of the four hospitals abroad, £.8,067.

Total for medical establishments, £.23,503.

**MARINE INFIRMARIES.**

Expenses of the four infirmaries (year ending 1841), £.4,362.

**MEDICAL STORES.**

Sum voted on the year's estimates for the purchase of provisions and medical stores of all kinds, for the sick in hospitals, sick quarters, and marine infirmaries, and for the supplies of the fleet, miscellaneous disbursements for medical purposes, &c., £.17,669.

## MARINE BARRACKS.

Expenses of the four barracks (year ending 1841), £.4,403.

## TRANSPORT ESTABLISHMENTS,

For facilitating the various transactions relating to Her Majesty's troop and store ships, and vessels employed by contract for the conveyance of troops and stores, to and from the colonies or elsewhere.

Since the reduction (soon after the Peace) of the Board of Commissioners for transports, this once extensive branch of the service has been conducted, under the immediate direction of the Admiralty, by naval agents resident and afloat; the former (two lieutenants), stationed at Deptford and Leith, receive £.400, and £.329 per annum; fourteen agents afloat (also lieutenants), £.330 per annum each.

Total expenses of the two transport establishments (year ending 1841), £.1,650.

In the naval estimates for the year are included the pay of officers (agents afloat), with the charges for hired ships employed in the transport service on account of the army and ordnance departments.

We here close the enumeration of Home and Foreign Establishments, the abstracts of whose several expenditure are intended not only to give an idea of the nature, extent, and comparative importance of each, but also to exhibit the strength, the power reserved, which England possesses in those best store-houses of a maritime nation—her naval establishments.

## CIVIL AND MILITARY DEPARTMENT.

### GREENWICH HOSPITAL.

From boisterous seas,  
The lap of ease  
Receives our wounded and our old.  
YOUNG.

The first founder of a national institution for the benefit of the sea service was Queen Elizabeth, who, in 1588, by the advice of Sir Francis Drake and Sir John Hawkins, established at Chatham a fund in perpetuity, denominated the Chest, for the relief of seamen wounded or disabled in their country's service. This benevolent design meeting with general approbation, the revenue of the chest was soon augmented to a large amount by private subscriptions and charitable bequests.

The Royal Hospital at Greenwich was founded, in 1696, by William III, who having made a grant for this purpose of the unfinished palace erected by Charles II on the site of the old royal edifice, ordered a new quadrangle to be added to it. The first stone was laid by Evelyn and Sir Christopher Wren, July 30, at five o'clock in the evening, Mr. Flamstead, the king's astronomical professor, observing the precise time by instruments\*. The subscriptions, according to Evelyn, "amounted to £.9,046 13s. 4d.; and His Majesty, with great munificence, placed his name on the list for two thousand pounds a year." The building was intended for the reception of seamen, who having served in the fleet, should from old age, wounds, or infirmities be rendered incapable of further active employment. The first admission took place in the reign of Queen Anne, 1705, when one hundred disabled seamen were entered on the foundation. It is said that the figure of *Winter*, in the representation of the four seasons on the ceiling

\* This magnificent structure was completed in 1778.

of the painted hall, is an exact likeness of a pensioner of that name, who was one of the first, if not the very first admitted, and who lived in the hospital to a great age.

In 1803, the chest was by act of Parliament removed from Chatham to Greenwich Hospital, and now forms a part of the revenues of that establishment.

The funds of the hospital, like those of the chest, have been assisted by private bounty and numerous bequests, to which may be added occasional votes of money from Parliament, and in the beginning of the last century, a grant from the Crown of the estates forfeited by the Earl of Derwentwater; but the permanent revenue is derived from the following sources. The net produce of estates in Northumberland, Cumberland, and Durham (including lead mines), the rents of property in Greenwich and London, interest of invested property and money in the funds, grant from consolidated fund (in lieu of sixpence per month, formerly paid by every seaman in the Royal Navy and the merchant service); lastly, one moiety of the freight of all monies or treasure imported into Great Britain.

Total income for the year ending 1830 ..... .. £.137,954

Number of pensioners.....	2,710	Expenditure .....	£.134,233
Nurses and female servants	142	Surplus .....	£.3,720

Besides the refuge, which this hospital affords to the aged, disabled, and infirm, there is also an asylum, with schools of instruction for the children of seamen.

#### SCHOOLS, UPPER AND LOWER, OF GREENWICH HOSPITAL.

THE UPPER SCHOOL is divided into two classes.

First class—consists of one hundred boys, the sons of commission and ward room officers of the Royal Navy and Marines.

Second class—three hundred boys, the sons of officers of the above or inferior rank, of seamen and private marines, and of officers and seamen of the merchant service. The whole four hundred boys, after three years' subsistence, clothing, and in-



struction are sent to sea, or otherwise disposed of as may be determined.

Every candidate for admission must have attained the full age of eleven and not exceed twelve years, being free from impediment of speech or other infirmity of body or mind.

THE LOWER SCHOOL receives four hundred boys and two hundred girls, the orphans or unprotected children of warrant and petty officers and seamen, and of non-commissioned officers and privates of marines. These children are admitted from nine to twelve years of age, and quit the institution at fourteen, the boys being sent to sea, and the girls put to trades or household service.

The schools are supported by donations and bequests, checks and mulcts in naval payments, collections made at the painted hall, and other contingencies.

The military department of the hospital is under the direction of a governor and a lieutenant governor, £.1.500, and £.800 per annum; there are on the establishment, four captains, £.500 to £.400 per annum; eight lieutenants, each £.230; two chaplains, £.300; a physician, and assistant physician, £.600, and £.400; a surgeon £.500; five assistant surgeons, from £.400 to £.150; and a dispenser, at £.300 per annum.

Annual pay of the whole, £.6,790.

The civil department has five commissioners, at £.600 per annum each; a secretary, cashier, six clerks, a steward, and architect.

Annual pay of the whole, £.3,970.

The Admiralty have also in their gift, eight livings belonging to the hospital, varying from £.500 to £.135 per annum.

Annual amount of livings held by naval chaplains on half pay, £.2,155.

The Board of Admiralty decide on the claims of officers and seamen for pensions or gratuities, according to the merits of each individual case.

## PERSONNEL.

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### NAVAL DISCIPLINE—RANK AND COMMAND—CLASSES AND DENOMINATIONS—PAY AND ALLOWANCES.

The regularity, order, and discipline, so conspicuous in every department of the British Navy—directing and informing with one mind, as it were, each separate member of a well organized body—must have contributed in no small degree to establish that proud pre-eminence which the fleets of England have hitherto maintained over those of other nations; and although to the young officer or seaman the laws of subordination rigidly enforced, the forms and ceremonials, a deference to which he is so strictly enjoined, may at first appear of trifling importance, often tedious and superfluous, yet every step which he gains in his profession will bring with it some practical conviction, that without those forms and ceremonials, those nice distinctions, those minute and punctilious observances, subordination would soon be at an end; and without subordination the service must inevitably become a mere negative force, a burthen and an incumbrance, or formidable only to those shores which it was intended to protect. With these preliminary observations on *discipline*, the vital principle of our naval as well as of every other system of military defence, we shall proceed to give a complete summary of the various classes, principal and subordinate, into which the naval service is at present divided, arranged in the order of precedence and command, with the nature and amount of pay established for each.

The officers of the Royal Navy are divided into three classes; *viz.* COMMISSION, WARRANT, and PETTY.

Commission officers comprehend flag officers, commodores, captains, commanders, and lieutenants, appointed by commission, or more properly by *warrant*, from the Lords Commissioners of the Admiralty, or by a commander-in-chief having authority in death or court martial vacancies abroad to make such appointments.

Warrant officers (superior and inferior) are appointed by warrant from the Lords Commissioners of the Admiralty, or by a commander-in-chief abroad.

Petty officers (quarter-deck and working) are entered by order of the Lords Commissioners, or by a commander-in-chief abroad, and in minor cases by the captain or commander of the ship or vessel in which they are borne.

#### RANK AND COMMAND.

Commission officers take precedence and command in the following order, which also exhibits their relative rank with officers of the army :

Admiral of the Fleet			Field Marshal.
Admiral of the Red Squadron	}	.....	General.
of the White			
of the Blue			
Vice-Admiral of the Red	}	.....	Lieutenant-General.
of the White			
of the Blue			
Rear-Admiral of the Red	}	.....	Major-General.
of the White			
of the Blue			
Commodore	... ..	.....	Brigadier-General.
Captain (after 3 yrs. from date of his first commission for a rated ship)	... ..	.....	Colonel.
Captain (any other)	... ..	.....	Lieutenant-Colonel.
Commander	... ..	.....	Major.
Lieutenant	... ..	.....	Captain.

Of the warrant officers, Masters rank with the junior Captains in the army; and Mates, during their\* first three years of actual service, with Ensigns; and after three years' service, with Lieutenants in the army, according to their seniority as Mates.

## PAY.

"Steady and active employment for the efficient, with a due encouragement of promotion, and a sufficient reward for those who may be worn out in the service, form the best foundations upon which the military and naval establishments of this country should be formed."

*Report of the Commissioners of Naval and Military Inquiry.*

In times past, ere the naval service was in our island a distinct profession, or navigation and tactics were understood as sciences requiring the devoted energies of a whole life to attain, the "wages" of sea officers and mariners were, like their employments, temporary; that is, whenever the object which required their assistance was accomplished, they were without further recompense summarily dismissed. Henry VIII first fixed the salaries of admirals, vice-admirals, captains, and seamen: the subsequent division of pay into "rates" by Charles I, was adopted for the purpose of assigning to each individual of a ship's complement a remuneration proportionate to the class of vessel, and the rank or station which he might occupy therein. In 1694 a scale of compensation was established for officers on certain conditions of service; but the first regular institution of HALF PAY for flag officers, captains, lieutenants, and masters, was in 1700: from this, passing over the many changes and modifications which took place in succeeding reigns, we come to what may be of more immediate interest to our naval readers, the

PRESENT RATES OF SEA PAY, EXTRA ALLOWANCE, &c., of the several classes in commission, with the amount of HALF PAY or SUPERANNUATION granted on temporary or final discharge from the service, including the last alterations in rank and pay,

as confirmed by order of the Queen in Council, August 10, 1840.

#### FLAG OFFICERS.

A flag officer, or commodore of the first class, is entitled to sea pay from the date of the order to hoist a flag, or broad pendant, until such flag or broad pendant shall be struck on the expiration of his term of command, or otherwise, by order of the Lords Commissioners of the Admiralty. The sea pay of a captain of the fleet commences from the date of his commission as such.

Class for Prize Money. See p. 118.		SEA PAY, PER ANNUM.			HALF PAY, PER ANNUM.		
		£.	s.	d.	£.	s.	d.
A	Admiral of the Fleet.....	2,190	0	0	1,149	15	0
	Admiral .....	1,825	0	0	756	10	0
	Vice-Admiral .....	1,460	0	0	593	2	6
	Rear-Admiral.....	1,095	0	0	456	5	0
	Commodore of the First Class }	ditto See "Commission Officers."					
	Captain of the Fleet..... }						

*In addition to his sea pay, every flag officer appointed commander-in-chief is allowed £3 a day (£1,095 per annum) for "table money" while his flag shall be flying within the limits of his station.*

*Flag officers, commodores, or captains of the fleet appointed to squadrons destined for foreign service, are authorized to draw six months' pay in advance; and, if a commander-in-chief, six months also of the additional pay or table money.*

#### OFFICERS OF FLAG SHIPS, FLAG OFFICER'S RETINUE.

Flag officers in command are entitled to nominate their RETINUE†, which consists of one extra lieutenant for the flag, a secretary and his clerk or clerks, admiral's coxswain, and domestics: these, with the master of the fleet, physician

\* Pepys, in his "Memoirs," gives a copy of the grant of an allowance first made by King Charles II to the sea commanders of all ships and vessels (yachts excepted) "for the support of their tables."

† In the reign of James II, admirals and captains were, in addition to their pay, then very small, permitted to rate as *retinue*, a certain number of men, for whom they had *so much per day with the value of their provisions*.

of the fleet, or inspector of hospitals and fleets, are remunerated according to the following scale:—the flag lieutenant (at the same rate of pay as in other ships), and warrant officers, receiving pay from the date of their respective appointments to the flag ship; the remainder from the day of their several appearances on board, as stated on the ship's books, or on those of any other ship entered for a passage to join her after the flag has been actually hoisted.

Class for Prize Money. See p. 118.		SEA PAY, PER ANNUM.			HALF PAY, PER ANNUM.			
		£.	s.	d.	£. s. d.			
I.	Master of the Fleet .....	199	4	7	.....(See "Warrant Officers.")			
II.	Secretary to Admiral of the Fleet	500	0	0	} after 12 years' ser-	219	0	0
	to an Admiral Com-	400	0	0				
	mander-in-chief ...	400	0	0				
	to any other Flag				vice as such ....			
	Officer .....	300	0	0				
I.	Physician of the Fleet.....	383	5	0	.....	191	12	6
	After 3 years' service as such..	574	17	6	.....	273	15	0
	After 10 yrs. service as such ..	766	10	6	.....	383	5	0
	or							
	Inspector of Hospitals and Fleets	574	17	6	.....	273	15	0
	After 10 yrs. service as such..	766	10	6	.....	383	5	0
III.	Clerk to Secretary of Com-				} (See "Petty Officers.")			
	mander-in-chief ....	60	16	8				
	to Secretary of Junior Flag							
	Officer or Commodore	50	3	9				
	Admiral's Coxswain.....	31	18	9				

Under the denominations of admiral's steward, cook, and domestics the number of ratings allowed each flag officer is regulated according to his degree of rank; thus,

	RATINGS.	PAY PER ANN.
Admiral of the Fleet .....	12	} each 21 5 10
Admiral .....	10	
Vice-Admiral .....	7	
Rear-Admiral, or Commodore First Class .....	5	
Captain of the Fleet .....	3	

Every appointment on situation, conferred by a flag officer or commodore on his retinue, ceases with their several employments in his service, or when his flag is struck, except in

case of death, or the removal of a commander-in-chief abroad, in which event his retinue are retained until another flag officer succeeds to the command, when, if not re-appointed, they are all sent to England free of expense—the flag lieutenant, secretary, clerks, and admiral's coxswain on full pay to the date of their arrival. The domestics cease pay from the day of the commander-in-chief's death or removal.

#### COMMISSION OFFICERS, UNDER THE RANK OF FLAG OFFICER,

Are of the undermentioned denomination, rank, and command, in the following order, and receive the annexed amount of *sea pay*, from the date of their several appointments to ships or vessels of war, until regularly superseded or discharged, when a reduction to the *half pay* list of their class takes place, from which they are at all times liable to be called again to serve.

#### RATES OF PAY.

Class for Prize Money. See p. 118.	SEA PAY,			HALF PAY,		
	PER ANNUM.			PER ANNUM.		
	In round Sums.					
	£.	s.	d.	£.	s.	d.
B {	Captain of 1st Rate.....	800	0 0	First 100 on the List....	264	12 6
	2d. ....	700	0 0			
	3d. ....	600	0 0		228	2 6
	4th. ....	500	0 0	Remainder .....	191	12 6
	5th. ....	400	0 0			
	6th. ....	360	0 0			
I. {	Commander.....	300	0 0	First 150.....	182	10 0
				Remainder .....	155	2 6
I. {	First Lieutenants (of 7 yrs.)	200	15 0	First 300.....	127	15 0
				Next 700.....	109	10 0
	Lieutenants (other) .....	182	10 0	After 3 yrs. sea service..	91	5 0
				Under 3 yrs. ....	73	0 0

A captain, appointed commodore of the second class (for commodore first class see "flag officers") is, from the date of hoisting his broad pendant to that of finally striking it, entitled to ten shillings *per diem* in addition to his pay as captain of the ship he commands; and this sum is increased to twenty shillings a day while within the limits of his station, or when in actual command of a squadron.

All commission officers of the same denomination take rank and command one of another according to the priority of their respective appointments, and where such are of the same date, as their names may be placed on the official list.

When a captain (not being a commodore) accepts the command of a ship or vessel under the sixth rate, he loses ostensibly his rank as such, and is, unless at courts martial, considered as a commander only, subject to the orders of all captains of rated ships, but superior to every other commander, *not also a captain and senior to himself*. This temporary inferiority does not, however, affect a captain's proper rank whenever he resigns the command of a small vessel, or is removed from it to a rated ship.

The lieutenants of ships bearing flags, or broad pendants, rank and command above those of all other ships or vessels; and whenever there are present more than one flag officer or commodore, the lieutenants take rank and command on all occasions of service according to the superiority of their respective flag officers, and one with another on board the flag ship, agreeably to the established regulations.

Lieutenants, commanding vessels of the third class, are not entitled to any rank or authority above other lieutenants, contrary to the usual order of precedence by seniority.

**SUPERNUMERARIES.**—When officers are ordered to do duty on board any of H. M. ships or vessels as *supernumeraries*, and not belonging to the complement of such ship or vessel, they are entitled to take rank and command, and be considered in all other respects, while so employed, as if actually a part of the complement.

**ACTING ORDERS.**—Officers, “acting by order,” in any rank or capacity, are considered subordinate to all officers *of the same denomination officially* appointed. They take precedence and command in their several classes according to the seniority of their respective “acting orders.”



## WARRANT OFFICERS

Receive the annexed amount of sea pay, half pay, or superannuation, and take precedence and command in the order following: the first six classes on the list (from master to purser inclusive) ranking with lieutenants R.N., but subordinate to them.

Class for Prize Money. See p. 118.	SEA PAY, PER ANNUM. £. s. d.	HALF PAY, PER ANNUM. £. s. d.
I. {	Master of 1st, 2d, 3d rate 212 18 4	First 100 on the list, being qualified for 1st or 2d rates ..... 127 15 0 Next 200, 3d or 4th rates Remainder (after 5 yrs. in the navy) 2 of which as master, or as master's mate, or midshipman.. 91 5 0
	4th, 5th, 6th.... 182 10 0	
	Sloops, &c. .... 152 10 0	
Secretary ("See Officers of Flag Ship")		
Physician of the Fleet—or		
Inspector of Hospitals & Fleets (ditto.)		
II. {	Chaplain * ..... 159 18 0	After 8 yrs. service at sea, or 10 in harbour .... 91 5 0 Increased 6d. per diem annually, till it reach 182 10 0
	Surgeon † .... 200 15 0	
	above 6 yrs. full pay service .. 219 0 0	..... 91 5 0
	above 10 yrs. .. 255 10 0	..... 109 10 0
	above 15 yrs. .. ditto	..... 127 15 0
	above 20 yrs. .. 328 10 0	..... 146 0 0
	above 25 yrs. .. ditto	..... 182 10 0
	above 30 yrs. .. ditto	(with leave to retire).. 237 5 0
		(with leave to retire).. 273 15 0
	Deputy inspector of hospi- tals and fleets ‡..... 365 0 0	..... 273 15 0
	Purser ..... 91 5 0	First 100 on the list .... 109 10 0 Next 200 ..... 91 5 0 Remainder ..... 73 0 0

\* And the bounty £.30 per annum (if appointed naval instructor and schoolmaster), with £.5 a year from each young gentleman under his instruction.

† Including service as assistant surgeon.

‡ With a further allowance, when employed in hospitals on shore.

# WARRANT OFFICERS.

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Class for Prize Money. See p. 118.		SEA PAY, PER ANNUM.				HALF PAY, PER ANNUM.			
		£.	s.	d.		£.	s.	d.	
<i>Naval Instructor &amp; School-</i>									
<i>master</i> * .....		127	15	0	Under 3 yrs. service.....	36	10	0	
after 3 yrs. full pay									
service .. .. .		136	17	6		After 3 yrs. full pay serv.	54	15	0
after 7 yrs. ....		155	2	6		After 10 yrs. ....	73	0	0
after 10 yrs. ....		182	10	0	After 20 yrs. ....	91	5	0	
					Half pay when not em-				
					ployed, or pension after				
					20 yrs. actual service,				
					10 of which rated as mate	45	12	6	
II.	Mate .....	65	3	7	† See Note.				
	Second Master, 1st, 2d, 3d,								
	4th rates..	71	5	2					
	5th, 6th rates, sloops, &c.	61	5	4					
	Assistant Surgeon .....	127	15	0		36	10	0	
	above 3 yrs. full pay serv.	136	17	6					
	under 10 yrs. do., small					54	15	0	
III.	vessels .....	146	0	0					
	above 10 yrs. full pay serv.	164	5	0					
	if serving in small vessels	182	10	0		82	2	6	
	above 20 yrs. full pay serv.	ditto				91	5	0	
Scale of Superannuation									
— Revised 1838.									
(For each year served.)									
II.	Gunner, Boatswain, Car-				As Warrant Officers in	Ships in Commission ...	Per Ann. §	3 0 0	
	penter ‡ 1st, 2d, 3d rates	91	5	0					
	in 4th, 5th, and 6th..	71	5	2					
	in sloops, &c. ....	61	5	4					
	Engineers,				As ditto in Ships in Ordi-	nary, or as Supernume-		1 0 0	
	1st class §, in charge ..	156	8	6					
III.	2d..... do....	104	5	8					
	3d..... do....	69	1	9					

\* And £.5 a year for each young gentleman under his instruction.

† Not entitled to half pay; but if discharged for wounds or hurts received, or permanent sickness or debility contracted in the service, an out-pension from Greenwich Hospital, either for life or for a limited period, at the discretion of the Board of Admiralty, of not less than £.18 5s., nor exceeding £.45 12s. 6d. per annum.

‡ With 7s. per month additional, in every rate, for tools.

§ In addition to which a further sum may be granted for meritorious services, varying from £.1 to £.15 per annum, besides any pension to which they may be entitled by the Greenwich Scale, for previous service as petty officers, or for wounds, hurts, &c.

|| With 6d. per diem for each engineer's boy whom he instructs. To engineers of all classes serving in H. M. steam vessels within the tropics, while the steam is up, one-half the amount of their respective pay in addition.

	SEA PAY, PER ANNUM.		
	£.	s.	d.
Engineers,			
1st class, not in charge.....	102	6	7
2d ditto .....	63	17	6
3d ditto .....	44	6	5

After the lieutenants, WARRANT OFFICERS take military command of a ship successively in the order of their respective ranks; but as those only whose general duties fit them for such a charge can be so authorized, that class usually termed civilians, or non-combatants, are excluded, and the following officers succeed to command according to seniority—

1. Masters; 2. Mates; 3. Second Masters; 4. Gunners; 5. Boatswains; 6. Carpenters.

All warrant officers of the same denomination rank with each other agreeably to their standing on the official list, or otherwise, according to the dates of their several warrants, except secretaries to flag officers, who take precedence one of another according to the rank of the flag officer to whom they are attached.

#### PETTY OFFICERS

Are divided into two classes—rank in the order following, and receive the annexed amount of sea pay while on service; and gratuities or pensions when (from disabilities, or after the prescribed period) discharged therefrom:

FIRST CLASS.		PAY PER ANN.		OUT-PENSIONS, <i>Greenwich.</i>
Class for Prize Money. See p. 118.		£.	s. d.	
III.	Midshipman .....	31	5 8	} If discharged for wounds, hurts, or disabilities, the same pension as <i>Second Master</i> (see "Warrant Offi- cers" and "Pen- sions.")
	Master's Assistant .....	46	5 6	
IV.	Volunteer, 1st class .....	14	6 9	
III	Clerk in 1st rate.....	61	5 4	
	2d, 3d .....	56	5 5	
	4th .....	51	5 9	
	all others .....	46	5 6	

# PETTY OFFICERS.

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## FIRST CLASS CONTINUED.

Class for Prize Money. See p. 118.		PAY PER ANN.	OUT-PENSIONS, Greenwich.
		£. s. d.	
III.	Master-at-arms, 1st, 2d, 3d, rate .....	33 17 10	For each year served as Petty Officer, Per Ann. 15s. 2d. $\frac{1}{4}$ $\frac{1}{2}$ , until it reach, Per Ann. £22 16s. 3d.
	4th, 5th, 6th .....	31 18 9	
	Sloops, &c.....	30 12 8	
	Seaman's Schoolmaster, 1st rate (maximum)	33 17 10	
	in Sloops, &c. (minimum)	26 14 5	
	Captain's Coxswain, Gunner's Mate, Boatswain's Mate, Quarter-master, Captain of Forecastle, 1st, 2d, 3d rate	29 19 7	
	4th, 5th, 6th .....	28 13 6	
	Sloops, &c.....	27 7 6	
	Ship's Corporal, 1st, 2d, 3d rate .....	29 19 7	
	4th, 5th, 6th .....	28 13 6	
IV.	Sloops, &c.....	27 7 6	
	Coxswain of the Launch		
	Captain of the Hold, 1st, 2d, 3d rate	29 19 7	
	4th, 5th, 6th .....	28 13 6	
	Sloops, &c.....	27 7 6	
	Sail-maker, Carpenter's Mate*, Caulkert, } Rope-maker, Blacksmith, 1st, 2d, 3d rate	33 17 10	
	4th, 5th, 6th.....	31 18 9	
	Sloops, &c.....	30 12 8	
	Ship's Cook, 1st, 2d, 3d, 4th, 5th rate ...	34 17 4	
	6th rate, Sloops, &c. ....	34 4 4	

Midshipmen and master's assistants take rank one of another, in their respective classes, according to their length of service in the Royal Navy; and the remaining petty officers, where there are more than one of the same denomination, as they are placed in seniority on the ship's books.

\* With 7s. per mensem in every rate, for tools.

† With the same allowance if they do duty as carpenter's crew, and provide themselves with tools.

‡ In addition to any other pension or gratuity he may receive for wounds, hurts, &c.

## SECOND CLASS PETTY OFFICERS.

Class for Prize Money. See p. 118.		PAY PER ANN.			OUT-PENSIONS, <i>Greenwich.</i>
		£.	s.	d.	
III.	Captain of Maintop, Captain of Foretop,				For each year served as Petty Officer, Per Ann. 7s. 7½d.† until it reach, Per Ann. £.11 8s. 1½d.
	1st, 2d, 3d rate .....	26	14	6	
	4th, 5th, 6th .....	26	1	6	
	Sloops, &c.....	24	15	4	
IV.	Captains of Mast and Afterguard, Yeoman of Signals, Coxswain of Pinnace, 1st, 2d,	26	14	5	
	3d rate .....				
	4th, 5th, 6th .....	26	1	5	
	Sloops, &c.....	24	15	4	
	Sail-maker's Mate*, Cooper, Armourer,	29	19	7	
	Caulker's Mate, 1st, 2d, 3d rate .....				
	4th, 5th, 6th .....	28	0	6	
	Sloops, &c.....	26	1	5	

In the event of the charge of a ship or vessel devolving upon the petty officers, they each assume command in the order of their respective classes, except the four following, who as non-combatants are exempt from all military command.

I. Seaman's schoolmaster. II. Master-at-arms. III. Clerk.  
IV. Ship's corporal.

## LOWER RATINGS.

Class for Prize Money. See p. 118.		PAY PER ANN.			OUT-PENSIONS, <i>Greenwich.</i>
		£.	s.	d.	
V.	Captain of Mizen top.....	23	9	3	See page 117.
	Carpenter's Crew ‡, Sail-maker's Crew .....				
VI.	Purser's Steward .....				
	Painter .....				
V.	Able Seaman, Yeoman of Store Rooms.....	22	3	2	
	Sick-berth Attendant, Trumpeter.....				
VI.	Captain's Steward, Do. Cook.....				
	Ward or Gun-room Steward, Do. Cook ....				
	Young Gentlemen's Steward, Do. Cook....				

\* With the same allowance as caulker, when doing duty as carpenter's crew.

† In addition to any other pension or gratuity for wounds, hurts, &c.

‡ With 7s. per month for tools.

# LOWER RATINGS.

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Class for Prize Money. See p. 118.		PAY PER ANN.	OUT-PENSIONS,
		£. s. d.	Greenwich.
V.	Ordinary Seaman .....	16 18 11	Able Seaman.
	Purser's Steward's Mate .....	14 19 9	
VI.	Cook's Mate, Barber.....	16 18 11	
	Landman .....	14 19 9	
V.	Seaman-Gunner*.		Ordinary.
	<i>Engineer, Boy, 1st Class</i> .....	22 3 2	Landman.
	<i>2d Class</i> .....	16 18 11	Boy.
	<i>3d Class</i> .....	14 19 9	See page 117.
	<i>4th Class</i> .....	9 9 0	
VI.	Boy, 1st Class.....	9 5 9	
VII.	2d Class .....	8 6 2	

*Those ratings inserted in italics having been recently added to the list, no prize class has yet been officially assigned them.*

## SCALE OF EXTRA PAY, OR ALLOWANCE.

For especial services, or work performed (not extending to assistance rendered in navigating ships or vessels) in dock-yards, or on board other ships than their own, by order of a commander-in-chief, or senior officer present.

	PER DIEM.
	£. s. d.
Lieutenants .....	0 4 0
Warrant Officers ranking with Lieutenants .....	0 3 0
Other Warrant Officers and Engineers .....	0 2 0
First Class Petty Officers .....	0 1 6
Other Petty Officers, Artificers, and Seamen .....	0 1 0
Landmen .....	0 0 9
Boys .....	0 0 3

\* In addition to the pay of any other rating they may hold, seamen-gunners receive

	PER MENSEM.		PER ANN.
	£. s. d.		£. s. d.
In all rates .....	0 2 0	or	1 6 0
Do. after 5 years' service .....	0 4 0	....	2 12 1
Do. after 10 years' service .....	0 5 0	....	3 5 2
			1 2

## PENSIONS.

The pensions granted to the officers and seamen of the Royal Navy for length of service—good service—wounds or injuries received in action, or in the execution of duty, are according to the following scale :

## “FOR WOUNDS, &amp;c., RECEIVED IN THE SERVICE.”

		PER ANN.	
		£.	£.
Admiral .....	from .... 300 .....	to .....	700
Captain .....	for wounds .... 250	loss of limb ..	300
Commander ...	ditto .... 150	ditto ..	200
Lieutenant ....	ditto .... 91 -5s.	ditto ..	91 -5s.

## ADMIRALTY “GOOD SERVICE PENSIONS.”

	PER ANN.		
	£.	s.	d.
Admiral .....	300	0	0
Captain.....	150	0	0

## “OUT-PENSIONS OF GREENWICH HOSPITAL.”

		£.	s.	d.
Captain .....		80	0	0
Commander .....		65	0	0
Lieutenant.....		44	14	9
		to	50	0
		0	0	0
Warrant Officers.	Loss of two limbs .. in action ..	50	0	0
	Injuries equal to .. ditto ..	45	0	0
	ditto .. not in action ..	35	0	0
	Loss of one limb .. in action ..	25	0	0
	Injuries equal to .. ditto ..	20	0	0
	ditto .. not in action ..	15	0	0
Second Master.				
Midshipman.				
Master's Assistant.				
Clerk.				
Volunteer 1st Class				
Able Seaman.	If discharged for wounds, hurts, permanent sickness, or debility, contracted in the service .....	18	5	0
		to	45	12
		6		
	Loss of two limbs (or wounds equal to)	27	7	6
	to	36	10	0
	Severe wounds or injuries .....	18	5	0
	to	27	7	6
	Do. less disabling.....	13	13	9
	to	18	5	0
	Wounds or injuries .....	9	2	6
	to	13	13	9

An *ordinary seaman* receives three-fourths, a *landman* two-thirds, and a *boy* one-half of the pension assigned to an able seaman. Pensions are also granted for life, or for a limited period—at the discretion of the Board of Admiralty—to such seamen or boys not entitled to an out-pension for length of service, as shall be discharged for wounds, hurts, or confirmed debility, the sum varying from £.9 2s. 6d. per annum (after fourteen years' service) to £.4 11s. 3d. per annum, under fourteen years. Sometimes, for slight claims, a gratuity, varying from £.1 to £.18, is given in lieu of a temporary pension.

Every *able seaman* is entitled—after twenty-one years' service—reckoning from the age of twenty, to a pension, varying from £.9 2s. 6d. to £.13 13s. 9d. per annum (in addition to any other he may have had granted for wounds, hurts, &c.) provided he shall not have been out of the navy more than five years at any time, and can produce the requisite certificates of good conduct, &c.

#### PRIZE MONEY.

The bestowal of rewards for captures made at sea is not of recent date: in times remote from the present, sea officers and mariners were, besides and exclusively of their wages and allowances for diet, entitled to a share or proportion of “the threddes of war, accruing from the goods and vessels taken from the enemy.” Charles II was the first monarch who relinquished in part this ancient right of the Crown, by a grant to his “commanders, their officers, and companies,” of the value of *all prizes taken from the people of Barbary*; and also with a salvage on re-captured English ships. In 1744 *all prizes taken at sea* were, by proclamation, declared to be the sole property of the captors.



From the *regulations for distribution of prize money*—established by William IV, 1836—we give a condensed abstract, as an index to the letters and numbers prefixed to the several classes of officers, seamen, and marines.

CLASS FOR THE DISTRIBUTION OF PRIZE MONEY.

- A. To the flag officer, or officers, one-sixteenth part of the whole net proceeds arising from captures or seizures made by the ships or vessels under his or their command, and of the rewards conferred for the same \*; distributed, when more flag officers than one shall be serving together, in the following proportions:—

If there be two flag officers—to the chief, two parts of the one-sixteenth, and to the other the remaining third part; but if the number of flag officers be *more than two*, the chief shall have one-half, and the other half shall be equally divided among the junior flag officers.

- B. To the officers comprised under this letter, who shall have been actually on board at the time of the capture or seizure, one-eighth of the remaining net proceeds, after class A has been deducted; and where there is no flag officer to claim one-eighth part of the whole: the remainder to be divided into shares and distributed as follows—

Class.	Class.
I. Ten shares each.	IV. Two shares each.
II. Six shares each.	V. One share.
III. Three shares each.	VI. Two-thirds of a share.
VII. One-third of a share each.	

When captains and commanders share together, the captains receive double the amount of the commanders—commanders

\* Except a flag officer commanding in any of the ports of the United Kingdom, who shall not be so entitled.

doing the duty of first lieutenants share like other commanders—lieutenants commanding small vessels, when not in company with a captain or commander, share as captains—the clerk in charge, in small vessels, shares as a purser, unless a ship or vessel bearing a purser be present, when he has only a share as clerk—supernumeraries\*, whether officers or men, share with those of the respective classes in which they may be acting.

PERMANENT RETIREMENT FOR NAVAL OFFICERS.

The retirement of captains with the rank and pay of rear-admiral having been abolished by the recent order in Council, (which directs that every captain, whose seniority brings him in turn for promotion, shall be placed on the list of flag officers for active service), the following is the permanent rank and pay retirement, as at present established for officers whose claims, on the grounds of long service, bring them within the scale of such provision.

Commanders—the first fifty on the list have the option of retiring with the rank of captain, annual pay £.191 12s. 6d.

Lieutenants—the first hundred on the list have the option of retiring with the rank of commander, annual pay £.155 2s. 6d. The next three hundred on the list may retire with the rank of commander, annual pay £.127 15s.

Chaplains—on the retired list have the same annual allowance, according to length of service, as chaplains on

\* Provided always, that no flag officer or other person, not *actually present* at the capture or destruction of any pirate vessel, or on board Her Majesty's ship or vessel at the taking or destroying of any ship of war or privateer, shall be entitled to share in the distribution of head, or bounty money, for the capture or destruction of such ship or vessel.

half pay; in addition to which they are eligible to hold civil appointments.

Surgeons—after twenty-five years full pay service, £.382 10s.

Inspectors of hospitals—after ten years to thirty years' service as such, retired pay varying from £.392 7s. 6d. to £.593 2s. 6d. per annum.

Deputy inspectors of hospitals—after fifteen years to thirty-five years' service as such, retired pay varying from £.319 7s. 6d. to £.433 12s. 6d.

Surgeons of hospitals—after ten years to twenty-five years' service as such, retired pay varying from £.209 17s. 6d. to £.284 7s. 11d.

Surgeons of the Royal Marine infirmaries—after ten years to thirty-five years' service as such, retired pay varying from £.260 1s. 3d. to £.447 3s. 6d.

Mates—after twenty years' service at sea, are allowed to retire with the annual pay of £.45 12s. 6d.





## ROYAL MARINE FORCES.

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The fortress rock—defence of Calpe's strait,  
The central hold of commerce, and the gate  
Of rich Levant, 'twas their proud boast to *gain*  
And *keep* against united France and Spain.

**ROYAL MARINE FORCES**—a body of troops employed in the naval service under direction of the Lords Commissioners of the Admiralty.

In all the early reigns we find that *soldiers* formed no inconsiderable portion of the crews of fighting ships: during the period of the Commonwealth especially, detachments of troops were constantly embarked for the purpose of making descents upon the land. Charles II, in 1664, raised a corps expressly for the sea service, which was designated the admiral's regiment. Subsequently it was usual to obtain drafts of men from the land forces for the King's ships as occasion required, and it is stated in the Marine Dictionary, that maritime regiments were originally raised and embodied with the sole view of being a nursery to man our fleets in time of war. In 1689, William III incorporated the admiral's regiment in the second foot guards, and appointed two regiments of foot to serve afloat: these were disbanded in 1698; but on the breaking out of the war of the Spanish succession (1702) maritime regiments were again formed, and in 1703, five thousand *marines*, so called for the first time,

were by vote of Parliament placed on the establishment of the navy. Our next record bears date the same year, when the grand fleet intended for the coast of Spain anchored at Spithead in order to receive on board ten thousand land forces (including a corps of marines), with which they set sail on the 1st of July.

From the despatches of Admiral Rooke, who assisted by a small body of troops ultimately directed his efforts against Gibraltar, it appears that "the marines alone, of all Her Majesty's land forces, were the only corps, who, acting under the orders of the Prince of Hesse Darmstadt, successfully stormed the fortress," and secured to this country one of its most important acquisitions.

The final incorporation, however, of this brave and meritorious corps with their brethren of the blue, which was carried into effect by an order in Council of the 5th of April 1755, has been productive of the best results. The establishment then formed consisted of fifty companies, stationed at the three principal sea-ports, with no higher officers in command than lieutenant-colonels, over whom, in 1760, *admirals* and *sea captains* were appointed *field officers*. The first general of marines was Admiral Boscawen, and the first colonel, Sir P. Brett. It was not until the year 1771 that officers of the marines were promoted to the rank of colonel.

The high estimation in which Earl St. Vincent held the services of this corps at the battle of St. Vincent, induced the gallant admiral to solicit and obtain, in 1802, from his sovereign George III, the title of *Royal* for his faithful marines. The distinctive emblem and motto conferred by George IV, in 1827, had its origin in the following circumstance.

The King having resolved to transmit through His Royal Highness the Duke of Clarence, then Lord High Admiral and a general of marines, the gift of a pair of colours to each of the di-

visions, and wishing at the same time to testify his approbation of their past services by some emblem or device (according to the practice of Continental nations) inscribed thereon, he desired a summary of the principal engagements in which the marine forces had distinguished themselves since the taking of Gibraltar. The list made out on this occasion included more than a hundred places scattered over different parts of the world. From these, it is said, His Majesty, when about to choose a badge and motto for the new colours, finding it impossible to select any one in particular, determined to confer on the corps "the great globe itself" as their most appropriate device; directing also, that his own name should be added to their former bearing, the anchor; the motto *per mare, per terram*, so indisputably their own, being allowed to remain; and surmounting the whole, the word "Gibraltar," in commemoration of the brilliant services there performed.

#### RANK AND COMMAND.

The Royal Marine forces comprehend marines and marine artillery.

Officers are appointed by the Board of Admiralty, but promotions take place by seniority only.

"The duties of field officers are limited almost entirely to home service, and the rank itself may be regarded more as a position of honourable retirement, than as one generally entailing any necessity for foreign or colonial duty."

Officers and non-commissioned officers, when on sea service, take precedence and command one of another according to their respective ranks, and agreeably to the custom of the corps in all matters relating to their distinct duties as marines; but they are in no instance permitted to assume naval command or authority, unless ordered to do so by their superior officers, being on all occasions of service subordinate to the commanding

officer of the ship or vessel in which they are borne, and the officer of the watch whatsoever his rank may be.

*Present establishment of Royal Marines and Royal Marine Artillery  
(as revised in 1837).*

	Division.	Head-quarters.	Companies.	
Royal Marines	1st.	Chatham .....	22	} 90 divisional companies.
	2d.	Portsmouth....	27	
	3d.	Plymouth.....	23	
	4th.	Woolwich.....	18	
R. M. Artillery	.....	Portsmouth.....	2	Total, 92 companies.

The personnel of the Royal Marine forces is composed of commissioned officers, non-commissioned officers, and inferior classes.

Officers of the marines rank with officers of the line—post in the line of marine corps, when employed with land forces, between the forty-ninth and fiftieth regiments.

For the proper and regular management of the marine forces are appointed:—

	Pay per annum.
1 Deputy Adjutant General (a colonel).....	£.730 0 0
1 Assistant Deputy Adjutant General (a captain)..	538 7 0

Each DIVISION of marines has for its government, a colonel commandant, £.702 12s. 6d. per annum; a colonel and second commandant, £.365; and 3 lieutenant-colonels, £.310 5s. per annum each.

And of staff officers, 2 adjutants (first lieutenants of companies), £.118 12s. 6d. per annum each additional pay; 1 quarter master (a first lieutenant), £.85 per annum additional; 1 pay master of division, and 1 barrack master (captains or other officers appointed exclusive of the established number in each company), pay per annum, £.300, and £.182 10s.

A DIVISIONAL COMPANY consists of 1 captain, 2 lieutenants, 5 serjeants, 5 corporals, 3 drummers, 81 privates.—Total, 97.

AN ARTILLERY COMPANY—1 captain, 2 lieutenants, 2 second lieutenants, 6 serjeants, 6 corporals, 3 bombardiers, 3 drummers or fifiers, 95 gunners.—Total, 118, exclusive of a lieutenant-colonel in command of the two companies.

*Pay and Class for Prize Money of Royal Marines and Royal Marine Artillery, when embarked in ships or vessels of war; with Rates Half Pay, when superseded or temporarily discharged from Active Service.*

Class for Prize Money. See p. 118.	SEA PAY, PER ANNUM.			HALF PAY, PER ANN.		
	Royal Marines.			R. M. Artillery.		
	£.	s.	d.	£.	s.	d.
I. Captain* .....	191	12	6	200	15	0
II. { First Lieutenant after 7 yrs. service } .....	136	17	6	142	19	2
{ under 7 yrs. .... } .....	118	12	6	124	14	2
{ Second Lieutenant ..... } .....	95	16	3	101	17	11
OUT-PENSIONS, Greenwich.						
III. { Serjeant ..... } .....	26	2	6	34	6	6
{ if Colour Serjeant .... } .....	35	5	0	43	9	0
IV. { Corporal, after 14 yrs. .. } .....	20	18	2	31	5	8
{ from 7 to 14 yrs. .... } .....	19	7	9	29	15	3
{ under 7 yrs. .... } .....	17	17	4	28	4	10
V. { Fifer ..... } .....	15	4	2	16	14	7
{ Private, or Gunner after 14 yrs. .... } .....	15	13	11	18	15	10
{ from 7 to 14 yrs. .... } .....	14	3	6	17	5	5
VI. { under 7 yrs. .... } .....	12	13	1	15	15	0
{ Bombardier, after 14 yrs. .. } ..	..	..	..	28	13	6
{ from 7 to 14 yrs. .... } ..	..	..	..	27	3	1
As Pri- rates. { under 7 yrs. .... } ..	..	..	..	25	12	8

\* The rank of Brevet-Major, to which Captains were eligible previous to the Establishment of 1837, is now abolished. Major is also an obsolete rank in the serving corps.

† Quartermaster-serjeants, and Serjeant-majors, who having served three years and upwards, and are discharged with those ratings after twenty-one years' service, £3 0s. 10d. per annum, in addition to whatever pensions they may be entitled to.



## SCALE OF EXTRA PAY OR ALLOWANCE.

For extra duty or work performed by special order, in ships, dock-yards, or elsewhere—captains of marines receive the same allowance as sea lieutenants; lieutenants of marines, as the warrant officers, ranking with sea lieutenants; serjeants, the same as first class petty officers; corporals, as inferior petty officers and seamen; privates of marines, as landmen. —See page 115.

## PENSIONS—GRATUITIES—RETIREMENT.

Compensation for loss of limbs and severe wounds is granted to commissioned officers of the marine corps, according to the scale established for officers of the line. The non-commissioned officers and inferior classes are, for loss of limbs, wounds, hurts, or debilities contracted in the service, placed on the out-pensions of Greenwich Hospital, or receive gratuities therefrom, according to the scale of compensation established for able seamen, with whom they are also classed in the amount of pensions granted on discharge from service, being subject to the same conditions regarding testimonials of good character, period of servitude, and age, from which their services are reckoned.—See “Out-Pensions of Greenwich Hospital,” page 116.

Field officers of marines are entitled to the same amount of Admiralty pensions for “good service” as flag officers—£.300 per annum.

Officers are granted Retirement on the grounds of long services, ill health, and unfitness for active duty.

The permanent list of marine officers on retired full pay consists of the undermentioned, when complete in number—

8 Colonels Commandant.  
2 Colonels and Second  
Commandant.

6 Lieutenant-Colonels.  
25 Captains.  
10 First Lieutenants.

**QUALIFICATIONS FOR A MARINE OFFICER.** By recent regulations of the Board of Admiralty, no candidate shall be considered eligible to a commission in the marine corps who shall not have undergone an examination at the Royal Naval College, Portsmouth, and obtained a certificate that he possesses the required degree of proficiency in the following subjects:—

- |                                      |   |
|--------------------------------------|---|
| 1. Common and Decimal<br>Arithmetic. | 3. Algebra, as far as Simple Equations.                           |
| 2. First Six Books of Euclid.        | 4. A portion of Plane Trigonometry,<br>and the use of Logarithms. |

Since the above, a more recent order of the Admiralty (January 1841) directs, that in addition to the practice of naval gunnery, marine officers, studying at the college, shall henceforth acquire a thorough knowledge of steam machinery; for which purpose a steam vessel of ten horse power will be allowed for the exercise of the students.

The proportionate number of marines allowed to each ship or vessel, are borne on the books as part of the complement, and entitled, according to their several ranks and denominations, to the same advantages as the rest of the ship's company, with whom they are, in all matters of duty, subject to the general orders of the fleet.

## SERVICE AFLOAT.

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"Of all who since have used the open sea,  
Than the bold English none more fame have won."

DRYDEN.

The complement of a ship of war, exclusive of marines, is composed of officers, petty officers, mechanics, tradesmen, seamen, landmen, and boys; these, comprehending the several denominations into which each class is divided for rank and pay, perform separately, or in conjunction, the various duties that appertain to their respective departments.

Anciently, in the British marine, no particular class of men were trained expressly for the sea service, excepting only the pilot and *scip-herr* (skipper) or ship master. The feudal chief and humble vassal, arming together for the defence of their native land, or departing in pursuit of fame and conquest, retained their relative station on the vessel's deck as in the baronial hall, and the crew, which consisted of rowers or mariners, were employed without distinction of rank, in duties that are now executed by different classes of men. The labour of the oars, which must have been excessive, was cheered by music. In Cœur de Lion's galley

"They rowed fast and sung thereto  
With hevalow and rambeloo."

Richard's celebrated maritime code, founded on that of the Rhodians, and known throughout the world as "the laws of

Oleron," first established sea discipline ; but, according to the author of the *Anglorum Speculum*, we begin our catalogue of seamen in the fourteenth century, " before which time," he observes, " though there were many good seamen, there were few good English seamen."

In the reign of Henry VIII, our mariners improved in seamanship when that monarch elevated the navy into a more scientific profession, appointing to the command of royal ships and vessels " gentlemen acquainted with maritime affairs." Elizabeth's liberal patronage effected still more, she encouraged the young nobility on board her ships, and by the favour and consideration bestowed upon such as entered the naval service, this road to fame and opulence became thronged with courtly candidates.

Of our seamen in the seventeenth century, the author already quoted (Fuller) thus remarks: " and now to speak what envy cannot deny, Englishmen, whether for fights or discoveries, whether for tame ships (merchantmen), or wild ships (men-of-war), do carry away the garland from all other nations of the Christian world. The learned Keckerman, who being a German by birth was unbiassed in his judgment, and living at Dantz (a port of great trading, whither seamen repaired from all parts), and writing a book *De re nauticus*, may be presumed skilful therein, alloweth the English the best seamen, and next to them the Hollanders ; moreover I find the four first circumnavigators thus qualified for their nativities:— 1st. Magellanus, a Spaniard (more properly *Magalhaens*, a Portuguese, who, in consequence of unrequited services, renounced the land of his birth for that of his patron Charles V, of Spain). 2d. Sir Francis Drake, an Englishman. 3d. Sir Thomas Cavendish, an Englishman. 4th. Oliver Noort, an Hollander. The last had an English captain, Mellis by name, pilot to conduct him."

In how far, since the days of the worthy biographer, the British sailors who fought under Nelson, Howe, and Jervis, or with a Cooke, a Parry, a Ross, extended the known limits of the two hemispheres, have sustained their former reputation, needs not here a comment. We now pass to a description of classes and denominations, beginning with the lowest rating in the naval service.

### **Ship's-Boy.**

The orphan boy—who else might friendless roam,  
Here finds employment, pay, protection, home.

Boys are received on board Her Majesty's ships and vessels of war, from the Royal Naval Asylum, Marine Society, and other schools, at from fourteen to fifteen years of age, or at more advanced ages enter the service as volunteers, and are subsequently rated in classes according to their abilities. They are placed under the immediate superintendence of the master-at-arms, instructed by the seamen's schoolmaster, catechised by the chaplain, and trained in seamanship and military duties with the rest of the ship's company, being, for daily inspection, formed into a distinct division.

By an Admiralty order, 10th of December 1839, it was directed that all boys who might after that date volunteer for the Royal Navy, should be entered subject to the condition of remaining in the service for a period of not less than three years, after having obtained the rating of landman or ordinary seaman. In reference to this order, another memorandum directs, that when first class boys shall have served two years in the navy, and have completed their twentieth year, they shall, if qualified, be advanced to the rating of landman or ordinary seamen in the first vacancies that may occur in the ships or vessels in which they are serving, or otherwise will be

discharged as available for general service, into Her Majesty's ships or vessels fitting out.

From this obscure class, while yet the way from the fore-castle to the quarter deck was open to the meritorious and the fortunate, have sprung some of our most renowned naval heroes. Gibson mentions the following flag officers *who were cabin boys*.

ADMIRALS.	VICE-ADMIRALS.	
Sir Francis Drake.	Sir Wm. Batten.	Sir John Harman.
Sir John Hawkins.	Sir John Lawson.	Sir John Berry.
General Deane.	Badilow.	REAR-ADMIRALS.
Rainsborough.	Sir Thomas Tiddeman.	Sir Richard Staines.
Sir John Narborough.	Peacock.	Houlding.
Sir Wm. Penn.	Goodson.	Deacon
Sir Cloudesly Shovel*.	Sir Christopher Mings.	Sansom.

#### Landman.

By bold ambition led, and hope of gain,  
He leaves his humble plough and ripening grain,  
To seek a golden harvest on the main.

IN 1797 landmen, a new class, were appointed as part of ships' companies.

This rating is given to young men who enter the naval service for the first time in the capacity of mere labourers, or who having served at sea for any period less than twelve months, are ineligible to a higher rating. The landman is, as soon as possible, instructed in the duties of the ship by the petty officers of the station to which he is assigned, and takes

\* Cloudesly Shovel hearing Sir John Narborough express an earnest desire that some papers of importance might be conveyed to a distant ship, offered to swim through the line of the enemy's fire with the despatches between his teeth—a feat which the boy actually performed.

a part adapted to his capacity in the various exercises of the crew.

**Seaman—Ordinary—Able.**

“ Let the brave hardy sons of Neptune claim  
A nation's care ” —

**ORDINARY SEAMAN.**—(*Saman*, Sax.) No person can be rated ordinary seaman who has not served at sea for at least twelve months, and who shall not be found capable of performing some of the ordinary duties of a seaman, as rowing in boats, going aloft, reeving, coiling, and pointing ropes, &c.

**ABLE SEAMAN.**—A. B. The distinctive rating of this class, not less, perhaps, an object of emulation to the deserving sailor than is to the persevering student his first degree in the school of arts, cannot be obtained without the following qualifications:—

The candidate must have served an apprenticeship to the sea, or three years at the least, and shall be capable of performing most of the practical duties of a seaman, can hand, reef, and steer, use the palm and needle, fit rigging and sails, heave the lead, knows the points of the compass, and can acquit himself in all these particulars to the satisfaction of his officers.

During the last war not more than one-third part of ships' complements were allowed to be rated A. B.

The **MECHANICS** and **TRADESMEN**, classed as petty officers, or included in the lower ratings, constitute a very useful portion of the ship's company. Employed during the day in the exercise of their several occupations they are excused from night duty, and in consequence of this exemption are, by custom, denominated “the idlers;” yet among these idlers are oftentimes to be found good seamen, ready and willing, on

occasion, to assist their shipmates in the night-watch and duties aloft.

Every seaman, landman, and boy, serving in the Royal Navy, is required alike to wear the following dress—a round jacket of blue cloth with anchor-buttons, plain slashed sleeves with small buttons of the same pattern, a blue waistcoat, blue cloth or white duck trowsers, black cravat, hat with band of black ribbon.

### **Petty Officers.**

#### **FIRST CLASS—SECOND CLASS.**

As step o'er step to some proud temple leads,  
Rank above rank, and name to name succeeds.

**SECOND CLASS** petty officers comprise some of the most expert and practised seamen in the ship—the captains or leaders of topmen, afterguard, and waisters—men, who having obtained these ratings as the reward of diligence and good conduct in a former station, are ever foremost in such active duties as may bring them in the way of further advancement.

Petty officers of the second class wear the same dress as seamen, but with a mark of distinction on the upper part of the left sleeve of the jacket; viz. an anchor represented in white cloth.

**FIRST CLASS** petty officers—as gunners, boatswains, and carpenter's mates, quarter masters, and captains of the fore-castle, assume a more definite rank in the ship's company than the second or inferior class, the ratings which they hold being conferred only on select men, who by long experience and known abilities are fully qualified for the stations to which they are appointed. Their duties are principally under the



uniform, wear the same dress as seamen, but with a mark of distinction on the left sleeve of the jacket; viz. an anchor surmounted by a crown, represented in white cloth.

#### WARRANT OFFICERS.

##### *First Class Engineer.*

To science bred, and skill'd in useful art,  
He knowledge gains, and knowledge doth impart.

ENGINEER—a class of officer, placed on the official list 14th January 1837, rank and pay revised by order in Council 14th July 1838.

No person is deemed eligible to a warrant as first class engineer in the Royal Navy, who shall not have previously served at sea in the capacity of engineer, nor unless, having passed the examination prescribed for officers of this class, he shall be certified as being thoroughly acquainted with the principles on which the steam machine is constructed in all its parts, and capable of starting and stopping the engines, and also of setting right any defect that may arise either in engines or boilers, of adjusting the length of the various rods, the motions, slide valves, and eccentrics, and can make rough sketches, correct in proportions, of any part of the machinery.

From the first engineer is exacted a degree of mechanical skill beyond that of any other class in the service. It is his duty to instruct the apprentices, and he is directed to make entries in the log-book of every particular relative to the working and state of engines and boilers, and to keep a regular and minute account of his machinery-stores and expenditure.

The uniform of a first class engineer—the same as that worn by a gunner in the Royal Navy.

**Carpenter.**

“Thither the brawny carpenters repair,  
And as the surgeons of maim'd ships attend.”

**CARPENTER.**—Dr. Johnson cites Horne Took as authority to show that what we now call a carpenter was anciently called a smith, and from the edition of the New Testament, translated in the fourteenth century, and attributed to Wickliffe, it appears that even at that period carpenter and smith were synonymous; but in the seventeenth century, the first term, or the duties which it included, took a still wider range, for in the Royal Navy we find the carpenter invading the department of the ship-builder. Evelyn, in recording the launch of the Charles (1668), remarks, “she was built by old Shish, a plain honest carpenter, who, although he is hardly capable of reading, is yet of great abilitie in his calling.”

According to present regulations, no person is eligible to the warrant of carpenter, who shall not have served an apprenticeship to a shipwright, and have borne the rating of carpenter's mate for at least six months, nor unless he shall have passed the examination for officers of this class, and given proof that he understands the method of caulking, how to fish masts and yards in a ready and efficient manner, as also to calculate the proportions for making them from rough spars, and can write and cypher sufficiently well to keep a rough account of his stores.

The duties of the carpenter are many: he is charged with the receipt and care of all stores belonging to, and the daily inspection and repairs, where necessary, of the ship's hull, masts, yards, and fixtures; he regulates the work of his mates and crew; and the blacksmith, caulkers, and joiners are under his direction.

The uniform of carpenter, the same as that worn by a gunner in the Royal Navy.

**Boatswain.**

“Train’d to command, and range the various sail,  
Whose various force conforms to every gale.”

**BOATSWAIN** (formerly pronounced, and sometimes written, *bote-son*).—This important sea functionary, in the Spanish and Portuguese navies styled “master of the canvas,” and whose symbol of office, the silver call, was once the decorative appendage of an admiral of the fleet, is appointed to receive on board, and take charge of the ship’s rigging, cables, anchors, sails, canvas, boats, flags, ensigns, and whatever else is included under the denomination of boatswain’s stores.

No person can receive a warrant as boatswain, until he shall have served for one complete year with the rating, and actually doing the duty of boatswain’s mate, nor unless he has undergone the usual examination appointed for this class; his passing certificate of qualifications attesting that he is in every respect a thorough practical seaman, understands perfectly the rigging of ships according to the regulations of the service, knows how to stow and secure the anchors, to erect sheers, to get tops off and on the lower masts, and can write and cypher sufficiently well to keep a rough account of his stores.

The duties of the boatswain are constant and fatiguing; his station is the forecastle, whence he can direct the men aloft; and the labours of the sail maker and rope maker are under his superintendence. He pipes “all hands” for general work, and his mates repeat the call on their respective decks. If clever and good tempered, the boatswain is a leading man among the crew: the least popular of his duties is that re-

lating to punishment, at which, in presence of the captain, officers, and ship's company, he always assists to see that his mates perform impartially their office; but when the sentence is by court martial the boatswain is himself obliged to inflict the first part of the degrading chastisement, the rest devolves to his subordinates.

The uniform of a boatswain—the same as that worn by a gunner in the Royal Navy.

#### **Gunner.**

“The gunner now his ready match applies,  
And pealing thunders pierce the vaulted skies.”

**GUNNER.**—From the period when ordnance was introduced on board British ships and vessels of war, *gunners* appear to have formed a distinct class in the navy. The complement of the *Harry Grace de Dieu* consisted of 349 *soldiers*, 301 *mariners*, and 50 *gunners*.

No person is eligible to the warrant of gunner who has not previously served one complete year as gunner's mate, or other petty officer; nor, unless having passed the usual examination for officers of this class, he shall be certified as possessing the requisite qualifications, is a good practical seaman, understands the use and exercise of great guns, and how to secure them properly; knows the proportion of powder for loading guns of every description, the method of filling cartridges and arranging them in the magazine, and can write and cypher sufficiently well to keep a rough account of his stores.

The duties of the gunner relate chiefly to the care of ship's artillery and ammunition stores; he is to mount and secure the guns when received on board, and, under orders of his commanding officer, to keep the magazines at all times in a state of preparation for action, and the guns and small arms

ready for daily exercise. To execute the most laborious part of these duties he is allowed mates, and a crew of seamen gunners proportionate to the rate of the ship. The armourer is under his direction.

Uniform of a gunner in the Royal Navy — *Coat*, blue cloth lined with serge, fall-down collar, and round cuffs, gilt anchor-buttons on lappels, cuffs, and pockets, and three in the folds of each skirt; *waistcoat* white; *trousers* blue or white; *cravat* or *stock* black; *hat* plain, round; *sword*, *sword-knot*, and *belt*, according to regulation.

#### Assistant Surgeon.

“To him your sickly state you must refer,  
Your charter claims him as your visitor.”

No person can be admitted as a candidate for the warrant of assistant surgeon, who shall not produce a certificate from one of the Royal Colleges of Surgeons of London, Edinburgh, or Dublin, of his fitness for the appointment; nor unless he shall have undergone the examination for officers of this class, and shall produce proof of having received a classical education, that he possesses a competent knowledge of Latin in particular, is of good moral character, has served an apprenticeship, or been employed, in an apothecary's shop for at least two years, is not less than twenty nor above forty years of age, and unmarried.

In addition to the foregoing qualifications, it is required, that the candidate shall have actually attended a hospital in London, Edinburgh, Dublin, or Glasgow for twelve months, has been present at the prescribed number of lectures, and is sufficiently acquainted with every branch of modern science immediately connected with his profession.

It is the office of the assistant, who in large ships, where

there are more than one of the class, takes this duty in turn, to investigate, and report to the surgeon and the commanding officer every case of sickness or accident that comes within his knowledge; and, under direction of the surgeon, to administer the proper remedies to each. The daily occupation of the assistant is confined to the sick bay dispensary, and to visiting, professionally, in their cabins such officers as may require his assistance.

The uniform and appointments of an assistant surgeon in the Royal Navy—the same as surgeon, but without the epaulettes, or gold lace on the trowsers, the lace on the coat three quarters of an inch wide.

*Second Master.*

“Here you shall find a pilot skill'd to guide  
Through all the dangers of the perilous tide.”

No person is eligible to a warrant as second master who has not passed the usual examination appointed for officers of this class (which cannot take place before the candidate has attained the full age of nineteen, nor after his thirty-fifth year), nor unless he shall have given proof that he has served at sea for at least six years, three of which must have been in the Royal Navy as midshipman or master's assistant; or, being within the prescribed age, and having served six years at sea, shall have been one year or more a master, or two years a chief mate, or three years an inferior mate of a merchant ship; or shall have served in the two former capacities for a period, when combined, of eighteen months; or in the two latter, or the three capacities, for a period, when combined, of two years and a half.

The duties of a second master are those which qualify him for the situation of master, and comprehend the theory and

practice of navigation, with every other essential included in his peculiar department—for which, see “Master.”

The same uniform and appointments as masters in the Royal Navy, but without the epaulette, or gold lace on the trousers; the lace on the coat three quarters of an inch wide.

**Naval Instructor and Schoolmaster.**

“Let none presume to teach  
But such as boast a great, extensive mind,  
Enriched by nature, and by art refined.”

THE class of naval instructor and schoolmaster was established in 1837 by King William IV, to obviate the disadvantages formerly experienced by the junior officers of the quarter deck, whose so early introduction into active service was found to circumscribe their mathematical attainments, and considerably retard, if not altogether to preclude, any further advance in classical education.

Before any person can be admitted as a candidate for the appointment of naval instructor, he will be required to produce, besides satisfactory testimonials of good conduct, a certificate of his age, which must not be less than twenty, nor above thirty-five years. He shall then undergo a strict examination as to his competency to instruct in the following branches —

- 1st. Arithmetic.    2d. Geometry.    3d. Algebra.
- 4th. Plane and Spherical Trigonometry.
- 5th. The use of mathematical and nautical instruments.
- 6th. Theory of projectiles, and its application to gunnery.
- 7th. The classics.

Although a knowledge of the French and other modern languages, together with the principles of drawing, is not made

an indispensable qualification, yet a preference is always given to such candidates as possess those desirable acquirements.

Naval instructors, whether chaplains or not, are exempted from wearing uniform.

**Purser.**

“Not winds to voyagers at sea,  
Nor show’rs to earth more necessary be;  
Not to the thirsty boatswain flip,  
Than is a purser to a ship.”

PURSER (from *burse magister*)—a term which we find to have existed in the merchant marine in the reign of Henry IV. At what period this class of officer was first introduced into the Royal Navy cannot now be traced, but it is supposed that pursers formed a part of the complements of English ships ever since the establishment in this country of a regular sea force.

No person can obtain a warrant as purser, unless he has served in the navy three complete years, two of which he must have been rated as clerk; nor unless, having passed the usual examination for this appointment (which cannot take place before he has attained the age of twenty, nor after his fortieth year), the candidate, besides producing satisfactory testimonials of integrity and good conduct, shall give bond to the Crown in two sureties for the faithful discharge of his trust—in a sloop of war to the amount of £. 400, to £. 1000 in a first rate.

When appointed to a ship, or vessel, it is the duty of the purser to take account of the provisions, spirits, and slops, and to provide fuel, candles, oil, and other such articles, for which purpose he receives what is called “the necessary money,” a sum more or less according to the ship’s rate, or the class of vessel; he is also held responsible as an agent of Go-



vernment for correctness and punctuality in the following disbursements:— *Short allowance money*, i. e. quarterly payments to the ship's company for savings of provisions made by the several messes from the daily allowance, or whenever the officers and men are, by necessity, restricted in provisions, payment in money to the full value of such portion as may have been withheld. *Advance money* to the crew on account of wages. *Miscellaneous demands*, including payment to pilots, interpreters on foreign stations, and other claimants for stores supplied, or work performed; all and each of these transactions to be attested by the captain and signing officers.

The emoluments of a purser are derived from three sources.— 1st. Personal pay. 2d. Payment, at fixed prices for certain articles of provisions, upon which, in his accounts, a saving may appear to have accrued to the Crown. 3d. A commission of five per cent. on the value of the slop clothing, and a commission of ten per cent. on soap and tobacco issued to the crew.

The annual amount of pursery *net profits* is estimated at £.1 per man in every rate. From this standard may be readily computed, according to the present method of rating ships by their complements, the purser's income in any rate or class; but no vessel, whose complement is under 110 men, bears a purser, the duties of this office being committed to the clerk in charge, who, besides his personal pay, and commission on the issue of provisions, slops, tobacco, and soap, receives an annual allowance on the passing of his accounts varying from £.15 to £.50 according to the following scale.

Complements of from 105	to 96 men	£.15
„ „ 95	... 86	20
„ „ 85	.. 76	30
„ „ 75	... 66	40
„ „ 65 and under	.....	50

The uniform and appointments of a purser, the same as those of master but the buttons and button-holes of the coat are placed in pairs.

**Surgeon.**

" Diseases baffled, and lost health restor'd,  
In Fame's bright list his victories record."

THE name of Surgeon does not appear in any of the accounts of the British Navy before the year 1557, although probably of a much earlier date in that establishment. During the civil wars it was not uncommon for doctors of medicine to act as captains, and command regiments of cavalry and infantry, nor less frequently did military men, on resigning the sword and spear, assume the lancet and probe, and practise the art of healing rather than inflicting wounds. Thus Captain Anthony Morgan was, in 1647, created a Doctor of Medicine at Oxford, by the desire of General Fairfax, whose chief recommendation was, that the captain had well and faithfully behaved himself as a soldier in the service of the State.

No person is eligible to a warrant as surgeon in the Royal Navy, who shall not have served for three complete years in the capacity of assistant surgeon, nor unless, having passed the examination for this class, he shall obtain from the proper officers a certificate, that as regards skill, science, and practical experience, he is fully competent to the office of surgeon in any of Her Majesty's ships or vessels of war.

It is the duty of the surgeon to attend to the general health of the ship's company, and at all times, but especially in time of action, to afford prompt assistance to the wounded and the hurt. He visits the sick, under the care of the assistants, twice a day, or oftener if necessary, prescribes for such officers as may require his advice, and transmits annually to the Medical Board, a journal of cases and his mode of treatment.

To incite emulation in this department of medical science, the prize gold medal, established in perpetuity by the late Sir Gilbert Blane, is conferred once in every two years on such two naval surgeons, or assistant surgeons acting in that capacity, as shall produce the most approved journals while actually serving on board Her Majesty's ships or vessels.

The uniform and appointments of surgeon, the same as those of master, but the buttons and button-holes of the coat are placed by threes.

**Chaplain.**

"In teaching how to *die*, his precepts give  
The truest, wisest lessons how to *live*."

THE regulations respecting a candidate's qualifications for the sacred office require, that he shall be a deacon and priest of the Established Church, having graduated at one of the Universities; not exceeding thirty-five years of age, neither holding any benefice for the cure of souls. Before a warrant is conferred he shall give satisfactory proof that every requisite is possessed, and that no obstacle exists to his appointment.

The chaplain is bound no less by the instructions of the service, than the tenets of his profession, to be assiduously attentive to the moral and spiritual welfare of the community to which he belongs. It is his duty to perform Divine service, and to preach a sermon every Sunday, to visit the sick and prisoners, to examine the young gentlemen and ship's boys in the Church Catechism and Scriptures, and to be always ready to give such information or advice on religious subjects as may be required of him by any officer or other person in the ship.

In the ordinary exercise of his professional duties the chaplain has many opportunities of exemplifying the salutary

influence of his charitable doctrines in the amiable and ever respected character of a peace-maker. When the chaplain is also the naval instructor and schoolmaster, he performs the duties of that office in addition to his own.

**Secretary.**

“Not lured by hopes, nor by mean fears controll’d,  
And proof alike ’gainst flattery and gold.”

SECRETARIES to flag officers are generally appointed from the pursers upon half pay, to which class they again revert, unless re-appointed to service afloat.

The situation of secretary is one which requires a perfect acquaintance with the general routine of official correspondence, and the important transactions of a diplomatic nature which may at times be communicated to the secretary of a flag officer on a foreign station, implies the utmost reliance on the integrity and discretion of the person selected for this confidential employment.

Uniform and appointments of secretary to a commander-in-chief, the same as those of master of the fleet, but with eight buttons and button-holes down the front of the coat, placed in pairs. The secretary to a junior flag officer wears the same uniform and appointments as purser, or the uniform of the rank he may hold.

**Master.**

“True to his trust, when sacred duty calls,  
No brooding storm the master’s soul appals.”

MASTER (*Maester*, Dut.; *Maestre*, Fr.; *Magister*, Lat.; from *magis*, more, one great or high in authority).—This appellation, one of the oldest in the British service, although now of very

different application, and retaining but little of its former dignity, is never bestowed except upon persons of approved nautical ability.

The regulations of the service require that the candidate shall have passed the usual examinations for this rank (which cannot take place before he has attained the full age of twenty, nor after his fortieth year), having served at sea for at least seven years, two of these in the Royal Navy as acting master by order, mate, or second master; or with the above restrictions as to age, after seven years at sea, during which time he shall have served one year or more as chief mate, and two years as master of a merchant vessel; otherwise, two years chief mate and one year master, and shall produce the requisite testimonials of good conduct.

On his examination the candidate is required to prove that he is capable of taking charge of a ship of the rate specified in his passing certificate, to pilot her between the North Foreland and the Land's End, and particularly into the Downs, Spithead, and from thence through the Needles, and into Plymouth Sound; also, that he understands keeping a ship's reckoning at sea, ascertaining the variation of the compass, the latitude and longitude by observation, and that he is thoroughly acquainted with the principle of stowing holds, of rigging ships, and managing them under every circumstance.

These qualifications recapitulate the principal duties of the master, on whom the proper distribution of ballast, stores, and provisions chiefly depends; and, under direction of his commanding officer, the rigging, staying, and securing of the ship's masts in the position best adapted to her sailing trim. When at sea he makes a daily report to the captain, of the ship's place, bearing, and distance from the nearest headland; he registers in the log-book the daily issue of provisions, water,

and stores; and the keys of the hold and spirit room are in his keeping.

On all occasions of exercise, at quarters, in chase, or in action, the master directs the helm, whether to preserve or to obtain the desired position.

**SPECIAL PROMOTION.**—Masters and Second Masters are, by a special regulation, considered eligible to be promoted to the rank of lieutenant, if in the performance of their duty a case should arise where meritorious conduct would, in the opinion of the Admiralty, sufficiently justify such advancement—provided only the individual shall have served six years in the Royal Navy.

Uniform and appointments of a master, the same as those of a master of the fleet, but with one epaulette and strap, the lace on the coat one inch wide, and half inch wide.

#### *Master of the Fleet.*

“— he spreads the graduated chart,  
And bounds the distance by the rules of art.”

**MASTER OF THE FLEET.**—Formerly denominated Sailing Master of the fleet; a temporary appointment to a flag ship conferred on a master by warrant from the Admiralty, and which ceases with his employment in that capacity.

His duties are those of a master, in the execution of a more arduous and responsible office.

Uniform of a master of the fleet—*Coat*, blue cloth, single breasted, at angles with the skirts, eight crown-and-anchor buttons in front placed at regular distances, scarlet cuffs, and collar edged with lace one inch and a half wide, and three quarters of an inch wide, blue slash flap in the sleeve, edged with lace; *cravat* or *stock*, black silk; *waistcoat*, blue cloth or

white kerseymere ; *trowsers*, blue cloth or white duck. *Epaulettes*, *cocked hat*, *sword*, and *belt* according to regulation.

#### ORDER OF PROMOTION TO FLAG RANK.

As none of the individuals described in the foregoing classes are entitled to advance, in the regular line of promotion, beyond the degree of warrant officer, we shall from this point trace the progress of the naval candidate, whose entrance into the service as a volunteer of the first class renders him eligible to arrive to the rank of flag officer, provided he has served the prescribed period in each of the following classes — those of a temporary nature excepted.

##### *Volunteer of the First Class.*

“ Truth, bright as stars with thee prevail,  
Full be thy fame as swelling sail,  
Constant as tides thy mind, as masts elate ;  
Thy justice an unerring helm,  
To steer through life’s uncertain realm ;  
Honour and gain sure anchors of thy fate.”

**VOLUNTEER.**—In the Royal Navy signifies, as the term expresses, one who voluntarily enters the service of his country a candidate for preferment. First admissions are thus regulated.

The Board of Admiralty nominate annually twenty-five volunteers of the first class in lieu of those formerly received from the college.

Every flag officer appointed to a command, or to a port, is privileged, on hoisting his flag, to nominate a volunteer in addition to the one applied for by the captain of the flag ship.

Captains and commanders, on first commissioning, are each allowed a fresh entry of one volunteer first class, the remainder to be selected from young gentlemen who have already been in the service.

Under this system of restriction it is calculated that about fifty-five new appointments are made every year, twenty-five being nominated by the Admiralty, and thirty by the commanding officers.

No candidate can be rated as volunteer of the first class under twelve years of age, nor unless the inspecting surgeon shall report that he is free from impediment in speech, defect in vision, bodily disease or infirmity. As regards qualifications, the youth will be expected to write English from dictation, and to be acquainted with the first four rules of arithmetic, reduction, and the rule of three: but in addition to these merely rudimental parts of education, all else that a boy may have learned previous to going afloat will be found of the utmost advantage towards completing there a more extensive course of instruction; and with this object in view, he should not only be well grounded in arithmetic, grammar, and history, but as far as possible in a knowledge of French, "the Algebra of Tongues," and if attainable, in the elements of Latin and Greek also, for in no other profession or mode of life are superior acquirements or individual talents more highly appreciated, or so likely to advance the interests of their possessor.

The duties of a volunteer on board a ship or vessel of war are not specifically assigned, but he must learn to perform those of a *seaman* before he can become an *officer*.

On his first appearance as a citizen of the floating world, the young stranger is generally consigned to the care of some experienced petty officer, by whom he is initiated in the mysteries of knotting and splicing, going aloft, rigging masts and yards; and, when not engaged at school studies, he is daily



taught the use of small arms, the great gun exercise, and practical seamanship. The mathematical and scientific branches of education are conducted by the naval instructor and school-master, under whose superintendence the requisite degree of proficiency may be acquired during the probationary period of servitude.

**ANNUAL ALLOWANCE.** — The small pay of a young gentleman being quite inadequate to his ordinary expenses (including mess money, naval instructor, books, clothes, washing, hammock-man, and attendant), his friends are required to transmit regularly to the captain for his use a certain private allowance, the sum most frequently demanded in frigates, during the last war, was thirty guineas per annum; and this, with the chances of small shares of prize money, was considered sufficient. The peace establishment, with less incidental advantages, is more expensive. "Comfort and respectability," observes a competent judge of such matters (Captain Glasscock), "may be comprised in an annual allowance of forty guineas."

The youth, on his first going to sea, must be provided with a suitable outfit, which, if the destination of his ship can be ascertained, should in part be adapted to the climate of the place he is likely to visit. For those persons therefore, whose inland situation and unacquaintance with sea life, may render such information desirable, we subjoin a list of the articles indispensable for a

#### FIRST OUTFIT.

**SEA CHEST** — *not exceeding 3 ft. 6 in length, by 2 ft. 3 in breadth, 2 ft. 3 in height.*

1 superfine uniform coat, ditto waistcoat, and trowsers.	1 uniform cap, ditto sword, belt, and sword-knot.
1 cloth uniform jacket, waistcoat, and trowsers.	3 black silk handkerchiefs, 3 ditto stocks.
1 second-cloth suit for night watch, &c.	6 pair duck trowsers, 6 pair drill ditto.
1 round hat with gold loop, &c., or cocked hat.	6 pair jean trowsers, 3 ditto waistcoats.
	4 dozen white cotton shirts, 6 coloured do.
	6 night shirts, 3 flannel waistcoats.

3 worsted frocks, 6 cotton drawers.	1 pewter basin, beaker, and jug.
1 dozen shirt collars, 1 dozen pocket handkerchiefs.	Set of needles, pins, spare buttons, ribbon, tape, thread, &c.
1 clothes-bag, 3 pairs of gloves.	3 dozen pairs of cotton half-hose.
1 writing-desk with stationery.	6 pairs of worsted ditto.
1 great coat, or boat cloak.	3 pairs of dress shoes or boots.
2 sets of white lines for hammock clews.	2 pairs of <i>strong water-proof</i> shoes.
1 hair mattress and bolster, or pillow.	3 bottles of blacking.
1 counterpane, 1 pair blankets.	1 hat-brush, 1 clothes-brush, 3 shoe ditto,
3 pairs of sheets, 6 pillow covers.	2 pairs of braces.
4 mess tablecloths of 3 yards each.	1 dressing case furnished.
1 dozen towels, and sponge.	1 well bound folding slate and pencils.
1 portable trunk about 2 ft. long by 1½ broad, to contain a change of clothes, books, or articles in present use.	

Besides which he must have a case of instruments, a pocket watch, a quadrant, a spy-glass, formulæ for watch and station bills, log-books, and charts of home or foreign stations. The naval instructor will point out or procure the necessary school books.

The whole outfit (watch excepted) may cost at any of the out-ports, where the clothes can be made according to regulation, from fifty to fifty-six pounds sterling.

Uniform of volunteer—*Coat*, blue cloth lined with white serge, stand-up collar with a button-hole of white twist and button to correspond; *trowsers*, blue cloth or white duck; *cocked hat*, or a *cap* of blue cloth with lace band; *dirk* and *belt* according to regulation. Patterns or drawings of each article of uniform, as worn by the different classes of officers, are to be seen at the Admiralty Office, London, and at the offices of the several port-admirals.

#### Midshipman.

“The immortal Nelson styled Midshipmen their Country’s present and future hope.”

MIDSHIPMAN.—This term is supposed to have originated from the place assigned to the young gentlemen *amid-ships*, or abreast of the main mast.

After two years' service in the Royal Navy, a volunteer of the first class is rated midshipman by order of the Lords Commissioners of the Admiralty, or by his commanding officer; but this advancement cannot be obtained unless the candidate has conducted himself properly during the period of his previous service, nor unless, having passed the usual examination for this class, he shall be certified as possessing the desired qualifications; *viz.*, a competent knowledge of arithmetic, geometry, and trigonometry, a practical acquaintance with the use of the quadrant and its adjustments, and with the manner of making the requisite observations and computations for finding the latitude by the sun, moon, and stars; of taking and working double altitudes, and keeping a ship's reckoning by the common rules, usually denominated a day's work.

The duties of midshipmen, in their respective stations, embrace various details, as daily exercises with the ship's company below and aloft, keeping watch, mustering the men, clothes, and hammocks, attending working and watering parties on shore or in boats, conveying on board stores while fitting out, and assisting on all occasions where their presence may be required by their commanding officers.

Uniform of a midshipman—*Coat*, blue cloth lined with white serge, stand-up collar, with a white turn-back on each side; *cravat* or *stock*, black silk; blue or white *waistcoat*; *trowsers*, blue cloth or white duck. *Cocked hat*, *sword*, and *belt* according to regulation.

#### *Mate.*

“ Ever among the foremost he appears,  
Nor shuns the labour, nor the danger fears.”

MATE (*Maca*, Sax., a match, an equal; *Maet*, Dut.; *Mate*, Icel., a friend or companion).—This term which is used by seamen, in a general sense, to designate a partner or

equal, was formerly applied to the person who assisted the master, and occasionally acted as pilot under his direction; now, in the naval service, it distinguishes an individual of the second, or class of warrant officer.

According to the regulations of 1840, a mate's warrant is granted by the Lords Commissioners of the Admiralty, at the recommendation of the commanding officer of the ship or vessel in which he may be serving; but no person is entitled to claim this recommendation who has not conducted himself with propriety in his previous ratings, nor unless, having served six years at sea as volunteer and midshipman, he shall, in the latter capacity, have passed the usual examinations for the rank of lieutenant—if abroad, in seamanship and navigation, and if on the home station, in mathematics also, at the Royal Naval College.

All warrants conferred on qualified midshipmen by the commanders-in-chief on foreign stations will be confirmed, from their original dates, if approved of by the Board of Admiralty, provided the mates so appointed shall pass the deferred examination at the Naval College, within two months after their arrival in England.

The advancement from midshipman to mate, invests the young officer with a greater share of responsibility and more important trusts. He is now placed in charge of a deck, for the orderly appearance, and observance of the general and local regulations of which, he is held strictly accountable. When mate of a watch he has frequent opportunities of displaying a proficiency in the practical duties of his profession, and of gaining by diligence and activity the notice and approbation of his commanding officer.

**EDUCATIONAL REWARD.**—As an encouragement to this class, it was regulated by an Admiralty order, sanctioned by the Queen in Council, 8th July, 1838, that thirty additional

mates should thenceforth be constantly borne on the books of the Excellent (gunnery ship at Portsmouth), to be selected from those who having passed for seamanship and navigation, should, at the ordinary examination held on board the Excellent, acquit themselves with the most credit.

The successful candidates who receive sea pay, and are in all respects under the discipline of the ship, are instructed and lodged at the Royal Naval College, free of expense, for the space of one year, and then discharged.

COMMISSION FOR MERIT. — Besides the monthly examination at the College, a *special* examination also takes place every six months; and the mate who is reported the best qualified, provided he has attained the prescribed degree of proficiency, and produces satisfactory certificates of character and ability during the period of his instruction, and from the captain or captains with whom he has served, will receive a commission as lieutenant—the promotion to which rank is, in all other cases, by selection only of the Board of Admiralty.

Uniform and appointments of a mate, the same as those of lieutenant, but without the epaulettes and strap, or gold lace on the trowsers: lace on the coat three quarters of an inch wide.

#### Lieutenant.

“To all its rules conformity he paid,  
The service lov’d, and discipline obey’d.”

LIEUTENANT (from *lieu* instead, in the room or place of.)—This rank in the Navy derives its name from the well-known vicarious authority which devolves upon the lieutenant in the absence of the captain.

No person, except in the special case of masters and second masters, is considered eligible to a commission as lieutenant,

unless he has attained the full age of nineteen, and has served in the Royal Navy six complete years, two of which he must have been rated a midshipman; nor unless, having passed the usual examinations, he shall produce testimonials of good conduct, and from log-books kept by himself during the above period, and other documents, shall satisfactorily prove that his claims to preferment are well grounded. As regards qualifications, we can offer no better guide than an extract from the passing certificate for this rank, which states that after a strict investigation, the examining officers (three captains) are of opinion that the candidate is adequate to take charge of a watch at sea, to manage a ship in all situations, to rig her, and to steer her; to keep a ship's reckoning, and to ascertain her position by observation, according to the different modes now actually practised; and generally understands the various duties of a sea officer.

When appointed to a ship or vessel, the lieutenant is required by his instructions not only to execute punctually and zealously all orders received from his commanding officers, but also, to the utmost of his power, to see that all those who may be under his inspection perform with diligence and attention their respective duties. When in charge of a watch he is to direct the ship's course, and to preserve as nearly as possible her place, if in a fleet or squadron: he is to keep men at the mast heads during the day, and on the look out by night, and to see that all occurrences in his watch are carefully noted on the log board, duly attesting the same by his signature. This officer has various other duties to perform, as those relating to signals, gun exercise and evolutions on board, dock-yard work, and incidental service in boats or vessels; besides attending to the cleanliness and conduct of the men of his division, and superintend-

ing in a general way the progress of their several employments.

In the command of a vessel of the third class, or on detached service, a fair prospect of promotion is opened to the lieutenant, who in such employment may find more occasions for distinguishing himself than are to be expected in the ordinary course of subordinate duty.

The uniform and appointments of lieutenant, the same as those of a commander, but the gold lace, one inch, and half inch broad; and one epaulette only is worn on the right shoulder, with a strap on the left.

**Commander.**

"This station gain'd, reviving Hope once more  
Points to the red flag pendant at the fore."

**COMMANDER.**— An officer appointed to command a vessel of the second class; or, under a captain, to a ship of the line.

No person can be advanced to the rank of commander, who shall not have served two complete years at sea as lieutenant in Her Majesty's fleet.

Captains of line-of-battle ships have permission to nominate their commanders, subject to the approval of the Lords Commissioners of the Admiralty; but no officer is deemed eligible to such appointment who shall not have served three years in the command of a sea-going sloop of war, or three years as first lieutenant of a rated ship. With reference, however, to the last restriction, two years served as first lieutenant of a sloop of war, or as gunnery lieutenant is counted for one year served as first lieutenant of a rated ship, and so on in proportion for a greater or less period.

The duties of a commander appointed to a sloop of war are of the same description as those of a captain, although, from the smaller size of his vessel, they are less in amount, and comparatively lighter. In a line-of-battle ship the commander, as second in authority, has the same onerous duties to perform that formerly belonged to the first lieutenant. Being at all times, under the captain, the principal executive, he directs the fitting out, armament, and equipment, as also the performance of general and military exercises, and is responsible for the maintenance of order and discipline on board, making a daily report to the captain of all transactions occurring in his department.

Uniform and appointments of a commander, the same as those of a captain under three years, but without the badge on the epaulettes. *Cocked hat, sword, and sword-belt* according to regulation.

**Captain.**

“Who would not dare the battle fire—the wreck,  
To move the Monarch of her peopled deck.”

CAPTAIN.—This almost universal term of command is supposed to have originated, in the naval service, from *caput*, the head or chief, and *thane* a Saxon title of honour, which by a statute of King Athelstan was conferred on any merchant who had been thrice across the high seas upon his own account. — *Wilkins's Saxon Laws*.

No officer is considered eligible to a commission as captain in the Royal Navy, who has not served at sea one complete year as commander.

Whatever may be the individual talents or abilities of the officer in command of a rated ship, his qualifications must be the result of actual experience in the several grada-



tions of his profession; and though his duty, strictly speaking, is governed by the regulations established by the Monarch in Council—and the printed Instructions of the Admiralty furnish a minute and unerring directory framed to meet every question that may possibly arise in the ordinary course of service—yet from the hour of commissioning a ship and entering on his command, a captain has an anxious and important obligation to fulfil, numerous and responsible duties to perform. To his judgment, prudence, and humanity, are committed the welfare and comfort of a large and intelligent community; to his firmness, fidelity, and professional knowledge, the most powerful and expensive engine of war is entrusted; and by his individual example, no less than the orders which he is authorized to issue for the government of the ship, will the general effects of his delegated power prove beneficial or otherwise. In preparation for battle, alone, or in conjunction,

“his the still and mental parts,  
That do contrive how many hands shall strike,  
When fitness call them on.”

With regard to the duties of a captain (the details of which would far exceed our limits) they comprehend the management and control, personally, of every transaction officially comprised under the following heads; *viz.*—Fitting for sea—receipt and expenditure of stores—ship's books and accounts—discipline—pilotage—discharges to sick quarters—convoys and passengers.

Uniform of a captain of three years' standing—*Coat, waistcoat, and trowsers*, the same pattern as an admiral's but the lace one and a half inch, and three quarters of an inch wide, crown-and-anchor buttons, omitting the two wreaths of laurel; *epaulettes* having each a silver crown and

anchor on the strap; *cocked hat, sword, and sword-belt*, according to regulation.

**Captain of the Fleet.**

“Skill’d to command, deliberate to advise,  
Expert in action, and in council wise.”

“THE first captain to the admiral commanding-in-chief was directed, by an order from the Lord High Admiral, dated 28th March, 1672, to take rank as a flag officer.”—*Naval Calendar*.

Whenever an admiral of the fleet hoists his flag, a captain of the fleet is commissioned to assist him, or when a fleet or squadron under an admiral or commander-in-chief may, by the Admiralty, be deemed of sufficient extent and importance to require such an appointment, this temporary rank is bestowed on a flag officer or senior captain; if the former, he takes precedence and command according to his proper rank as such, but when a captain is selected, he must be constituted a commodore of the first class, so that (if not the senior captain) he shall, on meeting with one of longer standing than himself, immediately rank as first captain, only of the ship in which the commander-in-chief's flag is flying; having for that ship, as commodore of the first class, the commission of first captain also.

All orders of the commander-in-chief are issued through the captain of the fleet, whose duty it is to lay before that officer the various letters, communications, and official reports transmitted to him from every part of the fleet, including applications for refits, stores, provisions, &c. Besides which, he is required to keep a correct journal of the proceedings of the fleet, to be forwarded quarterly to the secretary of the Admiralty.

Uniform and appointments of a captain of the fleet, not a flag officer, the same as those of a commodore of the first class.

M

**Commodore.**

“Studios of fame, the gallant commodore,  
Hoists his broad pendant and forsakes the shore.”

THIS rank, of no remote date in the British service, and not noticed in our dictionaries at the beginning of the seventeenth century, is supposed to be derived from the Spanish *comendador*, one having command over others, or a company.

In the Royal Navy the temporary rank of commodore is conferred on a captain appointed, for particular service, to the command of a squadron or detachment of ships or vessels.

A captain, when authorized to wear a broad pendant, is recognized as a commodore of the first, or of the second class—of the first class when he has a captain of the same ship under him, and wears a red broad pendant, no senior captain being present, and a white broad pendant in presence of a senior captain. A commodore is of the second class when he has not a captain of the same ship under him, and is entitled to wear a blue broad pendant, no senior captain being present.

When a commodore of the first class is appointed, he is also, by commission, constituted first captain of the ship in which he is to serve, so that when in presence of, or meeting with a captain senior to himself, he shall rank and command, during the time they may remain in company, as first captain only of the ship which he commands. In like manner does a commodore of the second class yield precedence while in presence of a senior captain; the commodores of either class taking rank and command, not according to the priority of their respective appointments as such, but as they stand in seniority on the official list of captains.

The occasional suspension of rank, as above stated, does not, however, in any way affect the rank or authority of this officer on board the ships and vessels under his command: all

orders issued by, or reports made to a commodore so circumstanced being signed or addressed according to his usual designation—the second captain, when there is one, executing the duties of his station in a similar manner to the captain of a flag ship.

Uniform and appointments of a commodore of the first class, the same as those of a rear-admiral, but the epaulettes with a silver crown and anchor only on the strap.

#### Admiral.

“Our am’ral leads the way.”

ADMIRAL (French, *Amiral*; Danish, the same; German, *Ammiral*; Dutch, *Admiraal* or *Ammrael*; Italian, *Ammiraglio*; Spanish, *Almirante*.)—This title, in all modern languages derived apparently from the same source, is yet of doubtful etymology. Most of the old writers trace it to the Arab, *emir* or *amir*, a prince or ruler, and a Greek word signifying the sea; but Spelman, who contemns this “Centaur derivation,” thinks, with more probability, that the term was first in use among the Saracens, and from thence “by reason of the warres brought to us about the tymes of perhaps Richard I, or Henry III,” “for I finde,” he adds, “that not only Amira but Almirale was the ordinary title of the governors of countrys through all the territories of the Saracens, even from Spain when they possessed it, unto the uttermost parts of Lesser Asia; and Mahomet himself was so called, as being a name of dignity and estimation. N. Trevet notices, that in the great ship or *dromond*, taken by Richard I from the Saracens, there were seven admirals, whereby it should seem it was rather a name of eminence than office, for there could not be so many admirals for one ship.”

The Sicilians or Genoese are said to have been the first, who, at the beginning of the crusades, conferred this rank on the commander of a squadron of ships. The first English admiral on record is Richard de Lacy, to whom Henry III granted *Maritimam Angliæ*. During the reign of Edward I we find three admirals (by Walsingham called the admirals of the three coasts of England) in contemporary command, one having jurisdiction from the mouth of the river Thames northward, another from the mouth of the river Thames westward, and another of the west coast, including the shores of Wales and Ireland.

With the extension of England's maritime power the number of her admirals increased, and from a temporary employment, partly civil, partly military, to which in those days, barons, knights, and even priors\* were elected; the office finally became one of permanent establishment, purely naval and military, to attain which there is now none other ascent, save by the regular degrees of the profession.

Under existing regulations the promotions of captains to flag rank, which, as well as the advancement of the three classes of flag officers, take place contemporaneously with the general brevets of the army, are regulated by seniority, every captain being entitled to the rank and full pay when, in active service, of a flag officer, provided he has served or offered his services as a captain, and has not avoided or declined employment when called upon; but no flag officer is entitled to increased half pay with advanced rank, who has not completed, as captain in command of a rated ship, or subsequently as flag officer, the following period of sea service, *viz.*, four years during war, or five years when combined of war and peace, or six years during peace.

\* Robert Hales, prior of the Hospital of St. John of Jerusalem, in England, an admiral of the West, A. D. 1377.—John Redington, prior of the same hospital, also an admiral of the West, A. D. 1385.

**An Admiral serving in a Fleet.**

“Dare nobly then, but conscious of your trust,  
As ever bold and warm, be ever just.”

A flag officer serving in a fleet, but not commanding in chief, is enjoined frequently to inspect the ships put under his direction, to see that their crews are properly disciplined, that all orders issued to the commanding officers are punctually obeyed, and that the stores, provisions, and armament are kept as complete as possible. When at sea, he is to be careful that the ship which carries his flag, as likewise all others under his command, preserve correctly their station in whatever line or order of sailing the fleet may be formed, and during evolutions he is to be especially attentive to the manner in which his division or squadron acquit themselves, always correcting by signal or otherwise any apparent inattention or neglect.

**An Admiral commanding at a Port.**

“A prudent chief not always must display  
His powers in hostile ranks or fair array,  
But with th’ occasion and the place comply.”

A flag officer, commanding at a port, is appointed for the purpose of superintending the equipment, repair, and fitting of all ships and vessels sent into harbour or under orders for sea. It is his duty, in time of war, to keep a sufficient number of ships cruising in proper stations to guard and defend the port, and he is directed to use precautionary measures to preserve those under his orders in such a state of efficiency as to be always prepared against any sudden surprise, or the attacks of an enemy: he is also required to transmit to the Admiralty a *daily* report, or general letter, detailing the common occurrences, as ships and vessels arriving at and sailing from the

port; a *weekly* return of all supernumeraries on board the flag-ship; a *monthly* report of the state and disposition of the ships and vessels attached to his station; a *half-yearly* general return of treasure for freight received on board Her Majesty's ships, of the state and efficiency of which a correct return is also to be furnished.

*An Admiral commanding-in-chief.*

“ High on the deck behold he stands,  
And views around his floating bands  
In awful order join :  
They, while the warlike trumpet's strain,  
Deep sounding, swells along the main,  
Extend th' embattled line.”

A flag officer, appointed commander-in-chief, is authorized to direct the general arrangements of the fleet or squadron under his orders; to regulate the supplies and transfer of stores, provisions, and men to all parts of it; and, on a foreign station, to promote certain officers into vacancies occasioned by death or court martial. He is also required, in addition to the various and arduous duties of command, to observe with vigilant attention the movements of foreign ships and vessels of war, and to transmit from time to time to the secretary of the Admiralty such information as he may obtain with regard to the extent of naval force, and (in time of war) of the probable designs of the enemy.

When a commander-in-chief distributes his fleet into two parts, each part constitutes a division; a further distribution of these or one of them into two or more parts makes so many subdivisions; but if the fleet be arranged in three parts, each part is called a squadron—the foremost or van squadron commanded by the vice-admiral, the rear or aftermost squadron by a rear-admiral or commodore of the first class, the commander-in-chief himself leading the centre squadron.

On all matters of service the commander of a squadron is to report to the commander of the division to which he belongs, and the commander of the division to the commander-in-chief, except in cases where a discretionary power is allowed to either of these officers to give such orders as circumstances may require. But the duties of a commander-in-chief relate not merely to naval discipline and tactics, they embrace objects of a more important nature. Sometimes he has to undertake a difficult or delicate mission, and not unfrequently to act on his own responsibility on occasions of the greatest moment. In the absence of the commander-in-chief, the senior officer present transacts the general duties of the department, for the due performance of which he is not less responsible than the officer whom he represents.

#### Admiral of the Fleet.

“Mature in years, to ready honours move.”

ADMIRAL of the Fleet—the highest naval rank next to Lord High Admiral—is a mere honorary distinction which gives no command, but an increase of half pay. It is sometimes conferred, but not always, on the senior flag officer.

Uniform and appointments of Flag Officers:—

*Of a Rear-Admiral*—the same as an admiral, but with one star only on the epaulettes. *Of a Vice-Admiral*—the same as an admiral, but with two stars only on the epaulettes. *Of an Admiral*—the same as admiral of the fleet, but with three stars only on the epaulettes.

*Uniform of the Admiral of the Fleet*—Coat, blue cloth with two rows of buttons in front, ten in each row, scarlet collar and cuffs edged with two inch, and one inch gold lace, navy pattern, blue slash pointed flaps in the sleeves, with three small buttons in each flap, and edged with one and a half inch lace, pointed flaps in the skirts edged with two inch lace, and



three buttons under, the skirts lined with white kerseymere. *Buttons*, raised gilt; device, the crown and anchor between two wreaths of laurel. *Epaulettes*, of gold, with forty bullions each, over a bonnet and a crescent, and edging to the strap with silver crown and anchor and three silver stars, two upon the crescent and one above. *Trowsers*, blue cloth with gold lace; *cravat* or *stock*, black silk; *waistcoat*, white or blue cloth, or kerseymere; *cocked hat*, *sword*, *sword-knot*, and *belt* according to regulations.

Next—above all other flag officers, supreme in naval power, presides

**The Lord High Admiral.**

“Gracious to all—serene, devoid of pride,  
Though borne aloft on Fortune's highest tide.”

It is one of the sovereign's prerogatives to appoint “for the general government, direction, and control of maritime affairs,” a Lord High Admiral.

The duties of this office appear to have been exercised by some of our earliest admirals; Spelman, who devoted to the subject much analytical research, is inclined to think that by the grant of *Maritimam Angliæ* to Richard de Lacy, in 1224, the authority of Lord High Admiral was in effect conferred, although not so denominated; and Lediard states, that at the assembly at Bruges (8th March, 1286), William de Leyburn was styled *Admirallus Maris Angliæ* (Admiral of the English Sea); but the first time we find this title expressly conferred on a subject is in the reign of Richard II, when Richard Fitzallan, son of Alanus Earl of Arundel, was by Royal patent constituted *Admirallus Angliæ* (Admiral of England), and invested with all the privileges which at that time were attached to the office.

In the list of Lord High Admirals, subsequently, we number

many illustrious names :—Thomas, Duke of Lancaster, and John, Duke of Bedford, sons of King Henry IV; Richard, Duke of Gloucester, brother to Edward IV, twice filled this station, as did also James, Duke of York, during the reign of his brother Charles II, in whose time the office of Lord High Admiral was first put in commission, and who, for nearly ten years assumed to himself the emoluments of this department, as well as the administration of its responsible duties. James II on his accession, declared himself, in council, Lord High Admiral and Lord General, and assisted by his secretary Pepys, wisely and economically managed the affairs of the Admiralty to the end of his reign. Queen Anne appointed her consort, Prince George of Denmark, Generalissimo of all Her Majesty's forces by land and sea, and also Lord High Admiral, which rank he held until his death in 1708. During the latter years of Queen Anne the office was vested in a Board of Commissioners under which mode of government it remained for upwards of a century, when the title of Lord High Admiral was again revived in the person of His Royal Highness William Henry, Duke of Clarence, on whose resignation, in 1828, the office was once more put in commission.

The person appointed, by Royal patent or commission, as Lord High Admiral has sole command of the naval forces of the kingdom; his power extends over all sailors whether in actual service or living on shore, and he may impress and forcibly employ them, as also the merchant ships and vessels whenever the nation shall be in want of their services. Formerly this officer claimed a tenth or tithe of all goods seized as prize, but this right was abolished by statute in the reign of George II; he still however maintains a civil and criminal jurisdiction in all maritime cases, including whatever takes place in arms at sea, and on the rivers which flow into it, underneath and from the first bridge seaward, and in ports and harbours, and everywhere on the coast which the tide

covers, though between high and low water mark the admiral and common law bear rule alternately, one upon the sea, the other on the land, so that the same part of the shore which may be under the jurisdiction of the former at high water, ceases to be so at low water.

In his judicial capacity the Lord High Admiral presides at the High Court of Admiralty, where causes are decided appertaining to the sea; he has power to act by deputy; to arrest, imprison, and punish offenders; to seize goods forfeit, and, within his jurisdiction, to take cognizance of death, murder, and maim. By his authority naval commanders-in-chief are empowered to hold courts-martial at sea or in harbour; he appoints the judge of the Admiralty Court, registrar, deputy registrars, advocate general of the office of Lord High Admiral, judge advocate, counsel, and solicitor to the naval department, marshal and deputy marshal, coroners, receiver of the droits, and comptroller of the droits of Admiralty; besides the vice-admirals of the coasts of Great Britain and Ireland, and vice-admirals, judges, registrars, and marshals of the Vice-Admiralty and Prize Jurisdictions abroad.

In his military capacity, the Lord High Admiral exercises the right of appointing the vice-admiral and the rear-admiral of Great Britain, all classes of flag officers serving in the fleet, captains, commanders, and lieutenants, several of the warrant and inferior classes; and, in general, all who serve in the Royal navy are under his command.

The patent to His Royal Highness the Duke of Clarence was similar to that of Prince George of Denmark, with this difference, that the droits of Admiralty (formerly one of the emoluments of this office) were reserved from Prince George by an express covenant, while they were excepted in the commission of His Royal Highness, the late Lord High Admiral, who enjoyed only the net salary of £5,000 per annum.

## FLAGS — PENDANTS — ENSIGNS,

AS WORN BY HER MAJESTY'S SHIPS AND VESSELS OF WAR.

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“O'er remotest hostile regions  
Thy victorious flags are known.”

It is worthy of remark that the Red Flag at the main was not established (or re-established) in the British Navy until the year 1805, previous to which an Admiral of the White was the highest officer next to the Admiral of the Fleet. The new made rank giving rise at the time to frequent discussion, it was said that English admirals of old carried a red flag, but that this colour was subsequently reduced to two classes, the bold Van Tromp having, in a successful engagement, carried off the red flag of full admiral: another version of the same story is, that it was stolen from Sheerness or Chatham when the Dutch fleet blocked up the Thames. Whether or not the flag in dispute was ever before carried by an English admiral is still undecided, but according to Sir John Barrow, the battle of Trafalgar, if it did not restore, at least contributed to give to the navy the red flag at the main—a new edition of the “General Instructions” was then preparing, which came out the following year, and therein the three ranks of the three flags were by official register made complete.

**FLAG.**

THE ROYAL STANDARD.

Worn at the main top gallant mast head of any ship or vessel in which Her Majesty, or any member of the Royal Family, shall have embarked.

*Entitled to the Royal Salute of Twenty-one Guns.*

A ship bearing the Standard does not return salutes.



FLAG OF THE LORD HIGH ADMIRAL.

Worn at the main top gallant mast head of any ship or vessel in which the Lord High Admiral, or the Commissioners for executing the office of Lord High Admiral, may embark.

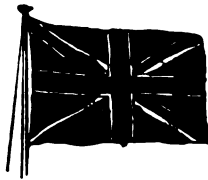
*Entitled to a Salute of Nineteen Guns.*



FLAG OF THE LORD LIEUTENANT OF IRELAND.

Worn at the main top gallant mast head of any ship or vessel in which His Excellency may embark within the Irish Waters, or in St. George's Channel.

*Entitled to a Salute of Nineteen Guns.*

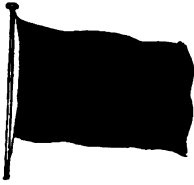


The Union Jack.

FLAG OF THE ADMIRAL OF THE FLEET.

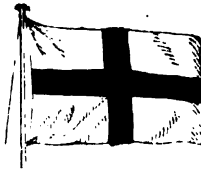
Worn at the main top gallant mast head of his own ship.

*' to a Salute of Seventeen Guns.*



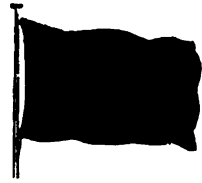
Flag of the  
Red Squadron.

OR,



Flag of the  
White Squadron.

OR,



Flag of the  
Blue Squadron.

**Worn by an Admiral—at the main top gallant mast head.**

*Entitled to a Salute of Fifteen Guns.*

**Worn by a Vice-Admiral—at the fore top gallant mast head.**

*Entitled to a Salute of Thirteen Guns.*

**Worn by a Rear-Admiral—at the mizen top gallant mast head.**

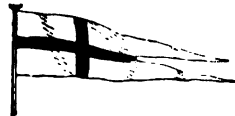
*Entitled to a Salute of Eleven Guns.*

#### PENDANTS.



RED.

OR,



WHITE.

**BROAD PENDANT OF A COMMODORE OF THE FIRST CLASS.**

**Worn at the main top gallant mast head.**

*Entitled to a Salute of Eleven Guns.*

1. *Chlorophyll a* and *Chlorophyll b* were determined by the method of Arar and Collins (1971).

the 1990s, the number of people in the world who are illiterate has increased from 1.2 billion to 1.5 billion. The number of illiterate people in the world is expected to increase to 1.7 billion by the year 2015. The number of illiterate people in the world is expected to increase to 1.9 billion by the year 2020. The number of illiterate people in the world is expected to increase to 2.1 billion by the year 2025. The number of illiterate people in the world is expected to increase to 2.3 billion by the year 2030. The number of illiterate people in the world is expected to increase to 2.5 billion by the year 2035. The number of illiterate people in the world is expected to increase to 2.7 billion by the year 2040. The number of illiterate people in the world is expected to increase to 2.9 billion by the year 2045. The number of illiterate people in the world is expected to increase to 3.1 billion by the year 2050. The number of illiterate people in the world is expected to increase to 3.3 billion by the year 2055. The number of illiterate people in the world is expected to increase to 3.5 billion by the year 2060. The number of illiterate people in the world is expected to increase to 3.7 billion by the year 2065. The number of illiterate people in the world is expected to increase to 3.9 billion by the year 2070. The number of illiterate people in the world is expected to increase to 4.1 billion by the year 2075. The number of illiterate people in the world is expected to increase to 4.3 billion by the year 2080. The number of illiterate people in the world is expected to increase to 4.5 billion by the year 2085. The number of illiterate people in the world is expected to increase to 4.7 billion by the year 2090. The number of illiterate people in the world is expected to increase to 4.9 billion by the year 2095. The number of illiterate people in the world is expected to increase to 5.1 billion by the year 2100.

[illegible]

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[illegible]





A RED BROAD PENDANT is worn by Commodores of the First Class, singly and in presence of all flag officers, no senior captain being present.

When two or more commodores of the first class are in company, the *senior captain*, only, wears the *red*, and the other, or others, a *white* broad pendant.

Where a commodore of the first class meets with a captain senior to himself, whether a commodore of the second class or not, he immediately strikes his broad pendant, nor again resumes it for such time as they shall be together.



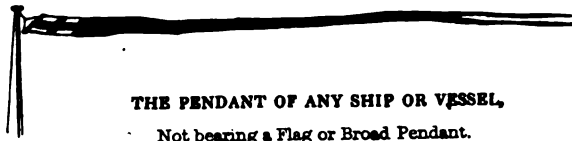
BLUE.

BROAD PENDANT OF A COMMODORE OF THE SECOND CLASS.

Worn at the main top gallant mast head.

*Entitled to a Salute of Nine Guns.*

A BLUE BROAD PENDANT is worn by Commodores of the Second Class in presence of all flag officers and commodores, there being no senior captain present, to whom, whether entitled to carry a broad pendant or not, he is bound to strike his broad pendant, and wear only the ship's pendant for such time as they shall be together; re-hoisting his broad pendant so soon as they may part company.



Worn at the main top gallant mast head.

#### ENSIGNS.



Ensign of the  
Red Flag.

or,



Ensign of the  
White Flag.

or,



Ensign of the  
Blue Flag.

Worn at the mizen peak, or from an ensign-staff at the poop or the taffrail.

Ensigns are worn or displayed by ships or vessels in commission, according to the flag of the admiral under whose orders they are serving, or otherwise as the circumstances of command may authorize.

In addition to the proper flag or pendant of the officer in command, the UNION JACK is worn for display at the bowsprit end: when hoisted at the fore top gallant mast head it is the signal for a pilot, at the mizen top gallant mast head it denotes that the ship has the guard, which is relieved after twenty-four hours by any other British ship or vessel of war that may be present. The Union Jack at the mizen peak—announced with a gun—is the signal for a court martial on board.





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**DISTINCTIVE FLAGS.**

Worn by Flag Officers at the heads of their boats.

|  |              |                               |
|--|--------------|-------------------------------|
| The Admiral of the Fleet, and all other Admirals—Their proper flags. |              |                               |
| Vice-Admiral of the Red.   | A Red Flag,  | with one white ball therein.  |
| Rear-Admiral.  | „            | with two white balls therein. |
| Vice-Admiral of the White.   | A White Flag | with one blue ball therein.   |
| Rear-Admiral.  | „            | with two blue balls therein.  |
| Vice-Admiral of the Blue.  | A Blue Flag, | with one white ball therein.  |
| Rear-Admiral.  | „            | with two white balls therein. |

These, with the Telegraphic flags and pendants, and the private signals, confided only to the commanding officer, comprise all the “bright intelligences” of the Naval Code.

**SALUTES.**

The following salutes are directed to be fired by Her Majesty's ships and vessels in compliment to—

|   |          |
|---|----------|
| An Ambassador—a Duke—a Governor of one of Her Majesty's colonies or foreign possessions, being a Peer .....   | 15 guns. |
| Any other Peer—the First Commissioner of the Admiralty—<br>an Envoy Extraordinary—a Governor of one of Her Majesty's colonies or foreign possessions, not being a Peer... | 13 guns. |
| Any Chargé des Affaires, or other Minister under the rank<br>of Envoy Extraordinary .....   | 11 guns. |
| A Consul General—a British Factory.....   | 9 guns.  |
| A Consul .....  | 7 guns.  |

In firing a salute, the interval of time between each gun may be stated at from five to seven seconds—the Royal salute of twenty-one guns has the least interval.



## ORDERS OF KNIGHTHOOD

### BRITISH AND FOREIGN.

---

“Go forth my honoured champion, go  
Worthy of pow’r, defend for me  
Religion, justice, liberty.”

THE term Knight is supposed to be derived from *enicht*, an appellation given by the ancient Germans to their youth, after they had attained to the privilege of bearing arms.

The first institution of knighthood as a Christian military order is by all writers referred to the eleventh century, when the besiegers of the Holy City, under Godfrey of Bouillon, united themselves into a confederacy, recognising as one fraternity all who embraced the same cause; by this means affording the protections of a community to their poorer brethren and stranger crusaders, for whose reception houses or hospitals were established—those who belonged to the knights hospitallers, as they were called, binding themselves with vows to the observance of certain rules and restrictions, of which universal charity, strict morality, and celibacy were the principal.

To the hospitallers succeeded the knights templars, whose fame spreading through every land, new orders of knighthood sprung up, instituted by almost every sovereign in Europe. Of these primitive orders, all that have remained to the present time, with those that have since been added, are now consi-

dered as forming two distinct species, *viz.*, regular knighthood, and honorary knighthood.

Regular knighthood is applied only to such military orders as uphold their original institutions, requiring of their professors vows of celibacy and the wearing a particular habit—such are the knights of Malta.

Honorary knighthood is a titular distinction which princes confer on other princes, ambassadors, ministers, and on their own or foreign subjects of inferior rank, in reward of eminent services civil or military, but particularly the latter. Such are the orders of the Garter, Bath, St. Michael, and St. George, &c. and various foreign orders.

The following include all the British orders of knighthood and such Foreign orders and honorary distinctions as have been bestowed on British subjects and officers in Her Majesty's service—with abbreviations, mottoes, dates of institution and revival—arranged and classed from the works of Clark, Urban, and Townsend.

## BRITISH ORDERS.

- K. G. Knight of the Garter—*Honi  
soit qui mal y pense.* 1350
- K. T. Knight of the Thistle—*Nemo  
me impune lacessit.*—Inst.  
1540: revived 1703
- K. P. Knight of St. Patrick—*Quis  
separabit.* 1783
- G. C. B. Grand Cross of the Bath—*Tria juncta in uno.*—Inst.  
1399: revived 1725
- Classed and augmented, 1815.
- K. C. B. Knight Commander of the  
Bath.
- C. B. Commander of the Bath.
- K. M. G. Knight of St. Michael and  
St. George, Ionian Islands  
—*Auspiciis melioris avis.* 1818
- K. W. Knight of Windsor (naval). 1349

## FOREIGN ORDERS.

## France.

- K. S. E. St. Esprit—*Benoist St. Esprit* 1578
- K. S. L. St. Louis—*Bellicæ virtutis  
premium.* 1693
- K. M. F. Military Merit—*Pro virtute  
bellicæ.* 1759
- L. H. Legion of Honour—*Honneur  
et patriæ.* 1802

## Denmark.

- K. E. D. Elephant—*Magnanimi pre-  
tium.*—Inst. 1190: revived 1488
- K. M. H. Merit—Inst. 1768: revived 1818
- K. A. H. St. Anne of Holstein—*Amantibus justitiam pista-  
tem Adæm.* 1738



**Sweden.**

- K.S. The Sword — Inst. 1525: re-  
vived. 1748  
K.P.S. Polar Star — *Nescit occasum* 1748  
K.G.V. Gustavus Vasa — *Gustaf-*  
*den tredie justiftare.* 1772

**Russia.**

- K. A. St. Andrew — *Sanctus Andreas,*  
*Patronus Russe.* 1698  
K.A.N. St. Alexander Newski —  
*Pro labore et patria.* 1725  
K.S.A. St. Anne — *Amentibus jus-*  
*titium, pietatem, fidem.* 1735  
K.S.G. St. George — *Sa Schlusbu i*  
*Chraborst* (for service and  
bravery.) 1769  
K.S.W. St. Wladimir. — Inst. 1782:  
revived. 1801

**Poland.**

- K.W.E. White Eagle — *Pro fide,*  
*rege, lege.* — Inst. 1325: re-  
vived. 1705  
K.M.P. Merit — Inst. 1791: re-  
vived. 1807

**Netherlands.**

- K.W. Wilhelm. 1815

**Austria.**

- K.G.F.A. Golden Fleece — *Pre-*  
*tium non vile laborum.* 1429  
K.M.T. Maria Theresa — *Fortitudine*  
K.L. Leopold. 1808

**Prussia.**

- K.B.E. Black Eagle — *Suum cuique.* 1701  
K.R.E. Red Eagle — *Toujours la*  
*meme.* — Inst. 1706: revived 1774  
K.M. Military Merit — *Pour le me-*  
*rite.* 1740

**Bavaria.**

- K.M.J. Maximilian Joseph. 1806

**Hanover.**

- G.C.H. Grand Cross of the Guel-  
phic Order — *Nec aspera*  
*terrent.* 1815  
K.C.H. Knight Commander of Do.  
K.H. Knight of the Guelphic Order.

**Wurtemberg.**

- K.M.W. Military Merit. 1790

**Spain.**

- K.G.F. Golden Fleece — *Aurea*  
*n'eury.* 1429  
K.C.T. Charles the Third — *Virtuti*  
*et merito.* 1771  
K.S.F. St. Fernando. — Inst. 1774:  
revived 1811  
K.H.S. St. Hermenegilde — Inst.  
1147: revived 1814

**Portugal.**

- K.B.A. St. Bento d'Avis.  
K.T.S. Tower and Sword. 1808

**Italy.**

- K.I.C. Iron Crown. 1805

**Tuscany.**

- K.J.T. St. Joseph. 1807

**Sicily.**

- K.F.M. St. Ferdinand of Merit —  
*Pro fide et merito.* 1800

**Naples.**

- K.S.M. St. Mark — *Esto miles fi-*  
*delis.* 1572  
K.S.J. St. Januarius — *In sanguine*  
*factus.* 1738

|  |      |                              |      |
|--|------|------------------------------|------|
| K. J. St. Joachim— <i>Junxit amicus</i><br><i>amor.</i>      | 1755 | <b>Turkey.</b>               |      |
| K. G. N. St. George of the Re-union.                         | 1819 | K. C. Crescent.              | 1799 |
| <b>Sardinia.</b>   |      | <b>Greece.</b>               |      |
| K. M. L. St. Maurice and Lazarre—<br><i>Atavis et armis.</i> | 1434 | K. R. G. Redeemer of Greece. |      |
| <b>Malta.</b>  |      | <b>Persia.</b>               |      |
| K. M. Knight of Malta.                                       |      | K. S. L. Sun and Lion.       |      |
| St. John of Jerusalem.                                       | 1048 | <b>India.</b>                |      |
|  |      | K. D. E. Dooranee empire.    |      |

*Naval Actions and Engagements for which Honorary Medals have been granted from the commencement of the French Revolutionary War.*

|                                    |      |                                     |      |
|------------------------------------|------|-------------------------------------|------|
| Lord Howe's Action, 1st June,      | 1794 | Capture of La Thetis, 10th Nov.,    | 1808 |
| Battle off St. Vincent, 14th Feb., | 1797 | Capture of Isl. of Banda, 9th Aug., | 1810 |
| Battle of the Nile, 1st August,    | 1798 | Action off Lissa, 13th March,       | 1811 |
| Capture of Hermione, 25th Oct.,    | 1799 | Capture of La Rivoli, 12th Feb.,    | 1812 |
| Battle off Trafalgar, 21st Oct.,   | 1805 | Capture of Chesapeake, 1st June,    | 1813 |
| Action off Ferrol, 2d November,    | 1805 | Capture of L'Etoile, 27th March,    | 1814 |
| Battle off St. Domingo, 6th Feb.   | 1806 | Capture of President, 15th January, | 1815 |

Battle of Algiers, 27th August, 1816.—A Gold Medal of exquisite workmanship, presented by the Prince Regent to Lord Ermouth, commemorated, with an appropriate device and inscription, the object attained by that great and happy achievement.

Admirals wear the medal and chain suspended from the neck by a blue and white ribbon.

Captains wear the gold medal between the third and fourth button-hole of the coat—on the left side.

**A COMPLETE**  
**SUMMARY OF THE ROYAL NAVAL SERVICE.**

*As estimated 1st January, 1841.*

| <b>Ranks and Classes.</b>        | <b>No.<br/>in Commission.</b> |     |     |     | <b>On Half-pay,<br/>and Retired.</b> |
|----------------------------------|-------------------------------|-----|-----|-----|--------------------------------------|
| <b>Admirals</b> ... ..           | 3                             | ... | ... | ... | 28                                   |
| <b>Vice-Admirals</b> ... ..      | 2                             | ... | ... | ... | 59                                   |
| <b>Rear-Admirals</b> ... ..      | 6                             | ... | ... | ... | 89                                   |
| <b>Commodores</b> ... ..         | 4                             | ... | ... | ... | —                                    |
| <b>Captains</b> ... ..           | 71                            | ... | ... | ... | 634                                  |
| <b>Commanders</b> ... ..         | 91                            | ... | ... | ... | 888                                  |
| <b>Lieutenants</b> ... ..        | 564                           | ... | ... | ... | 1,848                                |
| <b>Masters</b> ... ..            | 160                           | ... | ... | ... | 298                                  |
| <b>Secretary</b> ... ..          | 14                            | ... | ... | ... | 1                                    |
| <b>Chaplains</b> ... ..          | 44                            | ... | ... | ... | 37                                   |
| <b>Physicians</b> ... ..         | —                             | ... | ... | ... | 8                                    |
| <b>Surgeons</b> ... ..           | 147                           | ... | ... | ... | 496                                  |
| <b>Pursers</b> .. ..             | 125                           | ... | ... | ... | 394                                  |
| <b>Naval Instructors</b> ... ..  | 24                            | ... | ... | ... | —                                    |
| <b>Mates</b> ... ..              | 508                           | ... | ... | ... | 5                                    |
| <b>Second Masters</b> ... ..     | 213                           | ... | ... | ... | —                                    |
| <b>Assistant Surgeons</b> ... .. | 271                           | ... | ... | ... | 60                                   |

**IN COMMISSION.**

|                                       |     |                                    |        |
|---------------------------------------|-----|------------------------------------|--------|
| <b>Gunners</b> ... ..                 | ... | <b>Clerks</b> ... ..               | 297    |
| <b>Boatswains</b> } ... ..            | 743 | <b>Other Petty Officers</b> ... .. | 6,428  |
| <b>Carpenters</b> }                   |     | <b>Seamen, A. B.</b> }             |        |
| <b>Engineers</b> .. ..                | 169 | <b>Ordinary</b> }                  | 19,578 |
| <b>Midshipmen</b> ... ..              | 485 | <b>Able</b> }                      |        |
| <b>Master's Assistants</b> ... ..     | 257 | <b>Landman</b> }                   |        |
| <b>Volunteers, first class</b> ... .. | 267 | <b>Boys</b> ... ..                 | 2,000  |

# SUMMARY OF THE ROYAL NAVAL SERVICE. 183

*Number of Seamen, Royal Marines, and Boys voted on the Naval Estimate for the Service of the Year ending 31st March, 1842.*

|                                 |   |                             |        |   |        |
|---------------------------------|---|-----------------------------|--------|---|--------|
| To be employed<br>in the Fleet. | { | Seamen (including Officers) | 30,500 | } | 39,000 |
|                                 |   | Marines (ditto) ...         | 6,500  |   |        |
|                                 |   | Boys ... ..                 | 2,000  |   |        |
| In Service on Shore             |   | Marines ... ..              |        |   | 4,000  |
| Half Pay, and<br>Retired.       | { | Naval Officers ... ..       | 4,845  | } | 5,315  |
|                                 |   | Marine Officers ... ..      | 470    |   |        |
| <hr/>                           |   |                             |        |   |        |
| Total number in the Service—    |   |                             |        | { | 48,315 |
| on shore and afloat—on          |   |                             |        |   |        |
| half pay and retired ...        |   |                             |        |   |        |

## A STATEMENT OF THE SUMS

VOTED ON THE NAVAL ESTIMATES FOR THE YEAR 1841-2.

EFFECTIVE SERVICE, comprehending pay and wages to all classes of seamen and marines to be employed in service afloat and on shore, £.1,443,711—Provisions and victualling stores for thirty-nine thousand persons to be employed in Her Majesty's fleet, £.782,048—Admiralty office, £.121,844—Office for the registry of merchant seamen, £.2,980—Scientific branch, £.31,982—Her Majesty's establishments at home, £.124,529—Establishments abroad, £.22,152—Wages to artificers, &c., employed in the establishments at home, £.575,507—Wages to artificers, &c., employed in the establishments abroad, £.34,500—Naval stores, &c. for the building and repair of ships, docks, wharfs, &c., £.1,282,536—New works, improvements, and repairs in the naval yards, &c., £.201,667—Medicines and medical stores, £.24,651—Miscellaneous services, £.283,788.

*Total for Effective Service* ... .. £.4,931,905

NON-EFFECTIVE SERVICE, comprehending half pay and retired pay to officers of the Navy, £.676,346—Half pay and retired pay to officers of the Marines, £.52,276—Pensions and allowances to naval and marine officers for good and meritorious services, and to the widows of officers—compassionate list—bounty to chaplains, and out-pensions of Greenwich Hospital, £.504,591—Civil pensions and allowances granted on superannuation to persons formerly employed in the civil establishment of the Navy, £.181,789—and lastly, £.267,249 for freight on account of the Army and Ordnance departments. Making the grand total voted for the service of the year amount to the sum of *Six millions, six hundred and fourteen thousand, one hundred and fifty-seven pounds.*



LONDON,

CHARLES WOOD, PRINTER, POPPIN'S COURT, FLEET STREET.

# IMPORTANT MARINE PRINTS,

PUBLISHED BY ACKERMANN AND CO., 96, STRAND,

LONDON.

|  | Plain. |    | Coloured. |    |
|--|--------|----|-----------|----|
|  | s.     | d. | s.        | d. |
| H. M. Steam Frigate the Cyclops, drawn by W. Knell .....   | 14     | 0  | 21        | 0  |
| British and American Steam Company's Ship President, ditto .....                                 | 14     | 0  | 21        | 0  |
| The British Queen and Great Western, by J. S. Cotman.....  | 6      | 0  | 10        | 6  |
| The Niger Expedition off Holyhead, Steamers Albert, Soudan,<br>and Wilberforce, by Walters ..... | 6      | 0  | 12        | 0  |
| Victoria Steam Tug, by Walters.....  | 6      | 0  | 10        | 0  |
| Transatlantic Steam Ship Liverpool, by Walters .....   | 7      | 6  | 15        | 0  |
| Royal William, by Walters.....   | 7      | 6  | 15        | 0  |
| British Queen, by Walters .....  | 7      | 6  | 15        | 0  |
| Ship Huddersfield, by Walters .....  | 7      | 6  | 15        | 0  |
| Victoria and Lockwood's Crew, by John Lynn.....  | 10     | 6  | 21        | 0  |
| President, by Walters .....  | 14     | 0  | 20        | 0  |
| Great Western, by J. Walter.....   | 14     | 0  | 20        | 0  |
| Amy Stockdale, 2-topsail Schooner.....   | 5      | 0  | 7         | 6  |
| Archimedes sailing.....  |        |    | 10        | 0  |
| ———— steaming.....   |        |    | 10        | 0  |
| British Queen .....  |        |    | 20        | 0  |
| Phoenix, Havre Steamer .....   |        |    | 10        | 0  |
| Sirius Steam Ship, the first that arrived in America .....                                       |        |    | 15        | 0  |
| Water Witch Brig (two engravings) .....  |        |    | 10        | 0  |
| Wellington off Dover .....   |        |    | 15        | 0  |
| General Steam-Navigation Company's Vessels :   |        |    |           |    |
| Caledonia Steamer .....  |        |    | 20        | 0  |
| Clarence ditto .....   |        |    | 20        | 0  |
| Countess of Lonsdale ditto .....   |        |    | 20        | 0  |
| Earl of Liverpool ditto .....  |        |    | 20        | 0  |
| Fame ditto .....   |        |    | 20        | 0  |
| Giraffe ditto .....  |        |    | 20        | 0  |
| Harlequin ditto .....  |        |    | 20        | 0  |

# IMPORTANT MARINE PRINTS.

|  | Plain. |    | Coloured. |    |
|--|--------|----|-----------|----|
|  | s.     | d. | s.        | d. |
| <b>General Steam-Navigation Company's Vessels :</b>              |        |    |           |    |
| Leith Steamer .....  |        |    | 20        | 0  |
| London Merchant ditto .....                                      |        |    | 20        | 0  |
| Menai ditto .....  |        |    | 20        | 0  |
| Neptune ditto .....  |        |    | 20        | 0  |
| Ocean ditto .....  |        |    | 20        | 0  |
| Soho ditto .....   |        |    | 20        | 0  |
| William Jolliffe ditto .....                                     |        |    | 20        | 0  |
| British Queen Steam Ship, by J. Vernon, Esq. ....                | 4      | 0  | 7         | 6  |
| Great Western Steam Ship, by J. Walter .....                     | 4      | 0  | 7         | 6  |
| H.M.S. Powerful, 84 guns .....                                   | 4      | 0  | 7         | 6  |
| Cutter Yacht Alarm, by C. Taylor .....                           | 4      | 0  | 7         | 6  |
| Ditto    Sabrina, by G. W. Gunston, Esq. ....                    | 3      | 0  | 6         | 0  |
| Ditto    Gazelle    do .....                                     | 3      | 0  | 6         | 0  |
| H.M. Brig Water Witch, by J. Vernon, Esq. ....                   | 2      | 0  | 4         | 0  |
| Pacific S. N. Company's Chili and Peru, by G. Hawkins, Jun. each | 5      | 0  | 10        | 6  |
| Amy Stockdale off Dover, by W. J. Huggins .....                  | 5      | 0  | 10        | 6  |
| The Roscius New York Packet, by S. Walters .....                 | 4      | 0  | 7         | 6  |
| The Ironsides Steamer, by S. Walters .....                       | 4      | 0  | 7         | 6  |
| The Iron Steam Ship Rainbow, by S. Walters .....                 | 4      | 0  | 7         | 6  |
| H. M. Ship Pique, by J. Vernon, Esq. ....                        | 4      | 0  | 7         | 6  |
| The Fire King Steamer, by S. Walters .....                       | 4      | 0  | 7         | 6  |
| H. M.S. Magicienne, by J. Vernon, Esq. ....                      | 4      | 0  | 7         | 6  |
| H. M. Brig Pantaloon, by J. Vernon, Esq. ....                    | 2      | 0  | 4         | 0  |
| H. M. Ship Royal Adelaide, 84 guns, by J. Vernon, Esq. ....      | 4      | 0  | 7         | 6  |
| Schooner Yacht Dolphin, by O. W. Brierly .....                   | 4      | 0  | 7         | 6  |
| Homeward Bound Indiaman, by O. W. Brierly .....                  | 4      | 0  | 7         | 6  |
| Outward Bound Indiaman, by O. W. Brierly .....                   | 4      | 0  | 7         | 6  |
| H. M. Ship Rodney, by T. G. Dutton .....                         | 4      | 0  | 7         | 6  |
| Cutter Yacht Cygnet, by Brierly .....                            | 4      | 0  | 7         | 6  |
| Clipper Schooner Hellas, by Brierly .....                        | 3      | 0  | 6         | 0  |
| Australasian Steam Packet Sea Horse, by Brierly .....            | 4      | 0  | 7         | 6  |
| H. M. Brig Persian, by H. Fry .....                              | 4      | 0  | 7         | 6  |
| H. M. Ship Inconstant, by Brierly .....                          | 4      | 0  | 7         | 6  |
| H. M. Ship Pique, by Brierly .....                               | 4      | 0  | 7         | 6  |
| H. M. Steam Frigate Gorgon, by Brierly .....                     | 4      | 0  | 7         | 6  |
| Brig Yacht Wanderer, by Brierly .....                            | 4      | 0  | 7         | 6  |
| Ditto The Wanderers, R. Y. S., by Brierly .....                  | 4      | 0  | 7         | 6  |
| H. M. Cutter Harpy, by H. Fry .....                              | 4      | 0  | 7         | 6  |



# ACKERMANN & CO.

**REPOSITORY OF ARTS, 96, STRAND,**

**LONDON,**

**By Special Appointment to Her Majesty the Queen,**

**R. R. R. Prince Albert,**

**The Queen Dowager, and R. R. R. the Duchess of Kent,**

**&c. &c.**

*List of the most essential Requisites for Artists and Amateurs.*

## **ACKERMANN'S SUPERFINE WATER COLOURS.**

|   | <b>£.</b> | <b>s.</b> | <b>d.</b> |
|---|-----------|-----------|-----------|
| In Mahogany Boxes, 45 Cakes, Palettes, Marble Slab, Pencils,<br>Ultramarine Saucer Chalks, &c. &c. .... | 3         | 13        | 6         |
| Ditto ..... 36 Cakes, ditto .....ditto.....ditto...   | 3         | 3         | 0         |
| Ditto ..... 32 ditto, ditto .....ditto.....ditto...   | 2         | 12        | 6         |
| Ditto ..... 24 ditto, ditto .....ditto.....ditto...   | 2         | 2         | 0         |
| Ditto ..... 24 Small ditto .....ditto.....ditto...  | 1         | 17        | 6         |
| Ditto ..... 18 Cakes, ditto .....ditto.....ditto...   | 1         | 11        | 6         |
| Ditto ..... 18 Small ditto .....ditto.....ditto...  | 1         | 4         | 0         |
| Ditto ..... 12 Cakes, ditto .....ditto.....ditto...   | 1         | 1         | 0         |
| Ditto ..... 12 Small ditto, .....ditto.....ditto..  | 0         | 17        | 0         |
| Ditto, 18 Cakes, Lock and Drawer .....  | 1         | 1         | 0         |
| Ditto, 18 Small ditto, ditto .....  | 0         | 15        | 0         |
| Ditto, 12 Cakes, ditto .....  | 0         | 15        | 0         |
| Ditto, 12 Small ditto, ditto ... ..   | 0         | 12        | 0         |



|   |   | f. | s. | d. |
|---|---|----|----|----|
| Neat Mahogany Boxes, with a sliding Top .....   | 40 Cakes.....   | 1  | 16 | 0  |
| Ditto ..... ditto .....   | 32 ditto .....  | 1  | 8  | 0  |
| Ditto ..... ditto .....   | 24 Cakes .....  | 1  | 1  | 0  |
| Ditto ..... ditto .....   | 18 ditto .....  | 0  | 15 | 0  |
| Ditto ..... ditto .....   | 12 ditto .....  | 0  | 10 | 6  |
| Ditto ..... ditto .....   | 6 ditto .....   | 0  | 6  | 0  |
| Ditto ..... ditto .....   | 24 Small Cakes .....  | 0  | 14 | 0  |
| Ditto ..... ditto .....   | 18 ditto .....  | 0  | 10 | 6  |
| Ditto ..... ditto .....   | 12 ditto .....  | 0  | 7  | 0  |
| Ditto ..... ditto .....   | 6 ditto .....   | 0  | 4  | 6  |
| Mahogany Caddy Lid .....  | 24 ditto .....  | 3  | 3  | 0  |
| Ditto ..... ditto .....   | 18 ditto .....  | 2  | 10 | 0  |
| Ditto ..... ditto .....   | 12 ditto .....  | 1  | 16 | 0  |
| Rosewood Caddy Lid .....  | 12 Cakes.....   | 2  | 2  | 0  |
| Ditto ..... ditto .....   | 18 ditto .....  | 2  | 10 | 0  |
| Ditto ..... ditto .....   | 24 ditto .....  | 3  | 3  | 0  |
| Solid Mahogany Boxes, French Polished, Lock and Key, 6 Cakes,<br>Brushes, Pencil, India Rubber, and Indian Ink .....                                    |   | 0  | 10 | 0  |
| Ditto ..... ditto .....   | 12 Cakes .....  | 0  | 14 | 0  |
| Ditto ..... ditto .....   | 18 ditto .....  | 0  | 19 | 0  |
| Ditto ..... ditto .....   | 24 ditto .....  | 1  | 4  | 0  |
| Mahogany Boxes, brass-bound, 18 Cakes, fitted up complete .....   |   | 3  | 0  | 0  |
| Ditto ..... ditto .....   | 24 Cakes, ditto .....   | 3  | 10 | 0  |
| Mahogany Boxes, brass-bound, 32 Cakes, fitted up complete .....   |   | 4  | 4  | 0  |
| Ditto ..... ditto .....   | 36 ditto, ditto .....   | 4  | 10 | 0  |
| Ditto ..... ditto .....   | 45 ditto, ditto .....   | 5  | 0  | 0  |
| Ditto ..... ditto .....   | 36 ditto, ditto, with Extras and a<br>Set of Colours, &c. for Velvet-Painting ..... | 6  | 16 | 6  |
| Handsome Rose-Wood, Inlaid Brass or Pearl, fitted up complete,<br>12 Cakes.....   |   | 2  | 12 | 6  |
| Ditto ..... ditto .....   | 18 Cakes, ditto..   | 3  | 3  | 0  |
| Ditto ..... ditto .....   | 24 ditto, ditto ..  | 4  | 4  | 0  |
| Ditto ..... ditto .....   | 32 ditto, ditto ..  | 5  | 6  | 0  |
| Ditto ..... ditto .....   | 30 Cakes, larger Box and Extras.  | 5  | 16 | 6  |
| Ditto ..... ditto ..  | 40 Cakes..... ditto .....   | 10 | 10 | 0  |
| Ditto ..... ditto .....   | 24 ditto ..... Inlaid<br>and Brass-angled all round .....                           | 5  | 5  | 0  |
| Ditto ..... ditto .....   | 40 ditto ..... ditto .....  | 12 | 0  | 0  |
| Boxes of Velvet Colours, complete, with directions .....  |   | 2  | 2  | 0  |
| Ditto ..... ditto .....   | ditto .....   | 1  | 4  | 0  |
| Ditto of Colours for Painting on Glass .....  |   | 1  | 16 | 0  |
| Boxes for Persian Work, complete, containing 5 Bottles of Colours<br>for Back-Ground, 9 ditto for Tinting, 6 Small Cakes, Brushes,<br>Saucers, &c. .... |   | 2  | 2  | 0  |
| Colours separate, Bottles for Back-Ground ... ..  | each  | 0  | 2  | 0  |
| Ditto for Tinting .....   |   | 0  | 1  | 6  |
| Boxes of Body Colours .....   |   | 1  | 11 | 6  |
| Ditto of Chalks, complete .....   |   | 0  | 12 | 0  |
| Sketching-Box, containing a Sketch-Book, Ivory Palette, Brushes,<br>Pencils, Colours, &c. ....  |   | 1  | 7  | 0  |
| Soft Colours in Japanned Boxes, 8 Cakes for Sketching .....   |   | 0  | 14 | 0  |
| Ditto ..... ditto ..... 12 ditto ..... ditto.....   |   | 0  | 18 | 0  |
| Ditto ..... ditto ..... 18 ditto ..... ditto.....   |   | 1  | 5  | 0  |

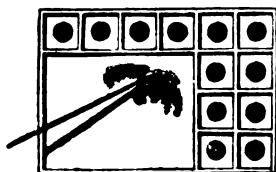
**SUPERFINE WATER COLOURS, PER CAKE.**

| £. s. d.                      |       | £. s. d.                      |       |
|-------------------------------|-------|-------------------------------|-------|
| Ultramarine .....             | 1 1 0 | Pink Madder .....             | 0 3 0 |
| Scarlet .....                 | 0 6 0 | Rose Madder .....             | 0 3 0 |
| Burnt Carmine .....           | 0 7 0 | Cobalt Blue .....             | 0 2 0 |
| Carmine .....                 | 0 5 0 | Burnt Lac Lake .....          | 0 2 0 |
| Smalt .....                   | 0 5 0 | Indian Black .....            | 0 1 6 |
| Dumont's Blue .....           | 0 5 0 | Prout's Black .....           | 0 1 6 |
| Imperial Permanent Blue ..... | 0 5 0 | British Ink ..                | 0 1 6 |
| Ultramarine Ashes .....       | 0 5 0 | Ackermann's Prepared Black .. | 0 1 6 |
| Orange Vermilion .....        | 0 5 0 | Crimson Lake .....            | 0 1 6 |
| Plantina Yellow .....         | 0 5 0 | Scarlet Lake .....            | 0 1 6 |
| Permanent Crimson .....       | 0 5 0 | Purple Lake .....             | 0 1 6 |
| Purple Madder .....           | 0 5 0 | Brown Madder .....            | 0 1 6 |
| Gallstone .....               | 0 5 0 | Indian Yellow .....           | 0 1 6 |
| Extra Madder Lake .....       | 0 5 0 | Sepia .....                   | 0 1 6 |
| French Blue, 1 & 2 .....      | 0 3 0 | Ditto, Warm .....             | 0 1 6 |
| Intense Blue .....            | 0 3 0 | Permanent White .....         | 0 1 6 |
| Lemon Yellow .....            | 0 3 0 | Chinese Ink .....             | 0 2 6 |

*All these Colours may be had in Half Cakes at Half Price.*

**AT ONE SHILLING PER CAKE; HALF CAKES, SIXPENCE.**

|                         |                         |                    |
|-------------------------|-------------------------|--------------------|
| Ackermann's Vermilion.  | Full Red.               | Purple.            |
| —— Yellow.              | Gamboge.                | Red Ochre.         |
| —— Green.               | Green Bice.             | —— Orpiment.       |
| —— White.               | —— Verditer.            | Raw Sienna.        |
| Antwerp Blue.           | Hooker's Green, 1, & 2. | —— Umber.          |
| Bistre.                 | Indigo.                 | Roman Ochre.       |
| Blue Black.             | Indian Red.             | Sap Green.         |
| —— Verditer.            | Italian Pink.           | Saturnine Red.     |
| Brown Ochre.            | Ivory Black.            | Transparent Yellow |
| —— Pink.                | King's Yellow.          | Ochre.             |
| Bronze.                 | Lac Lake.               | Vandyke Brown.     |
| Burnt Italian Earth.    | Lamp Black.             | Varley's Grey.     |
| Burnt Roman Ochre.      | Light Red.              | —— Warm Grey.      |
| —— Sienna.              | Mineral Blue.           | —— Purple Grey     |
| —— Umber.               | Naples Yellow.          | —— Warm Green.     |
| Chrome Yellow, 1, 2, 3. | Neutral Tint.           | —— Dark Green.     |
| Cologne Earth.          | Olive Green.            | —— Orange.         |
| Crimson Vermilion.      | Orange Chrome.          | —— Neutral Tint.   |
| Dragon's Blood.         | Payne's Neutral Tint.   | Venetian Red.      |
| Dutch Pink.             | —— Grey.                | Yellow Lake.       |
| Egyptian Brown.         | Prussian Blue.          | —— Ochre.          |
| Emerald Green, 1 & 2.   | —— Blue, Deep.          | —— Orpiment.       |
| French Green.           | —— Green.               | York Brown.        |

**THE STUDENT'S PALETTE.**

Of Earthenware, size  $12\frac{1}{4}$  inches by  $8\frac{1}{2}$ , containing 12 Divisions, fitted with Colours manufactured with particular regard to all the qualities essentially requisite for Sketching. Price, complete, 15s. 6d. — This Palette, without the Colours, price 5s. Also, the Colours may be had separately.

## ACKERMANN &amp; CO.'S SELECT LIST

MACPHERSON'S PERMANENT TINTS for Miniature Painting,  
1*l.* 10*s.* and 1*l.* 1*s.* per Box.

Shade-Tint, Dark Complexion, Half-Tint, Flesh-Tint, Auburn, Yellow, Blue,  
Deep Blue, Maroon Crimson, Intense Sepia, and Light Hair, 2*s.* each;  
Carnation, 3*s.*

*Half Cakes at Half Price.*

MACPHERSON'S Opaque Back-Ground for ditto, ditto, 2*s.* 6*d.* per Bottle.

ACKERMANN'S Colour Boxes for Flower Painting, 1*l.* 1*s.*

## ACKERMANN'S LIQUID TINTS FOR MAPS, CHARTS, PLANS, &amp;c.

|   |                       |   |   |   |
|---|-----------------------|---|---|---|
| Carmine, Orange, and Cobalt .....   | each, per bottle..... | 0 | 2 | 0 |
| Pomona Green, Indigo, Lake, Pale Yellow, Burnt Sienna, Bright<br>Purple ..... | ditto, ditto.....     | 0 | 1 | 6 |

## SUNDRY ARTICLES.

|   | £. | s. | d. |  | £. | s. | d. |
|---|----|----|----|--|----|----|----|
| Carmine, in Powder .....                | 0  | 1  | 6  | Gold Shells .....  | 0  | 1  | 0  |
| Ultramarine Saucers .....               | 0  | 2  | 6  | Silver Saucers .....   | 0  | 1  | 0  |
| Ditto Powder, various prices<br>per oz. |    |    |    | Ditto Shells .....   | 0  | 0  | 6  |
| Scarlet Saucers .....                   | 0  | 1  | 0  | Gold, Silver, and Copper<br>Bronze, per packet 1 <i>s.</i> & | 0  | 2  | 0  |
| Gold Saucers .....                      | 0  | 2  | 0  |  |    |    |    |

## BEST SUPERFINE INDIAN INK.

## ACKERMANN'S PREPARED DRAWING PENCILS,

OF DIFFERENT DEGREES OF HARDNESS AND DEPTH OF SHADE.

- H *A degree harder* than genuine Cumberland Lead, and used generally  
by Artists for Outlines, 6*d.* each.
- HH *Two degrees harder*, and used by Architects, 6*d.* each.
- HHH *Three degrees harder*, and used by Architects, Engineers, Surveyors,  
&c. &c., 6*d.* each.
- HHHH *Four degrees harder*, ditto, ditto, 6*d.* each
- HHHHH *Five ditto*, ditto, ditto, 6*d.* each.
- F *Fine Pencils* for Drawing, used by Artists, Drawing-Masters, and  
Pupils, 6*d.* each.
- FF *Fine Pencils* for Drawing, used by Artists, Drawing-Masters,  
and Pupils (double thick in Lead), serve for the deep Shades  
and Finishing Touches, 9*d.* each.
- B *Black*, used by ditto, and serve for the deep Shades and Finishing  
Touches, 6*d.* each.
- BB *A deeper Black* for Shading and Finishing than B, 6*d.* each.
- BBB *Still Blacker* for ditto, 1*s.* each.
- HB *Hard and Black* for Shading, 6*d.* each.
- HB Ditto (double thickness of Lead), 1*s.* each.
- EHB *Extra Hard and Black* for ditto, 9*d.* each.

ACKERMANN'S Fine Genuine Cumberland Black-lead Pencils (not prepared)  
have been known for many years as the best Pencils for Sketching and general  
use. They are particularly adapted for Young Students to copy from LITHO-  
GRAPHIC STUDIES, 6*d.* each.

**T SQUARES.**

| PLAIN MAHOGANY. |     | BOXWOOD, MARKED WITH<br>INCH SCALE. |     |
|-----------------|-----|-------------------------------------|-----|
| s.              | d.  | s.                                  | d.  |
| 12 Inch.....    | 2 6 | 12 Inch.....                        | 3 6 |
| 15 ditto.....   | 3 0 | 15 ditto.....                       | 4 6 |
| 18 ditto.....   | 3 3 | 18 ditto.....                       | 5 0 |
| 21 ditto.....   | 3 6 | 21 ditto.....                       | 5 6 |
| 24 ditto.....   | 4 0 | 24 ditto.....                       | 6 0 |

**BONY PARALLEL RULES.**

|               |     |
|---------------|-----|
| 6 Inch.....   | 1 0 |
| 9 ditto.....  | 1 6 |
| 12 ditto..... | 2 0 |
| 15 ditto..... | 2 6 |
| 18 ditto..... | 3 6 |
| 21 ditto..... | 4 6 |
| 24 ditto..... | 6 6 |

**MAHOGANY DRAWING BOARDS AND EASELS.**

|   | £. | s. | d. |
|---|----|----|----|
| Demy 4to. size 8 inches by 6 .....                            | 0  | 4  | 0  |
| Royal 4to. 10½ ditto 8 .....                                  | 0  | 5  | 6  |
| Imperial 4to. 13 ditto 9½.....                                | 0  | 7  | 0  |
| Half Medium 15 ditto 11 .....                                 | 0  | 8  | 0  |
| Demy 18 ditto 13½.....  | 0  | 10 | 0  |
| Medium 20 ditto 15½.....                                      | 0  | 11 | 0  |
| Royal 22 ditto 17 .....                                       | 0  | 14 | 0  |
| Folding Table Easels, Deal .....                              |    |    |    |
| —— Ditto ditto, Mahogany.....                                 |    |    |    |
| Mahogany improved Rack Desk, Drawing Board and Easel combined | 2  | 2  | 0  |

N.B. By means of moveable hinges the Board fixes either way.

| Per Sht.                                      | VELLUM DRAWING PAPER. |  | Per Quire. |
|---|-----------------------|--|------------|
| s. d.   | HOT-PRESSED.          |  | £. s. d.   |
| 0 2 Demy 20 inches by 15½.....                |                       |  | 0 3 6      |
| 0 3 Medium 22½ ditto 17½.....                 |                       |  | 0 4 0      |
| 0 4 Royal 24 ditto 19½.....                   |                       |  | 0 6 0      |
| 0 8 Do. extra thick, smooth or rough .....    |                       |  | 0 12 0     |
| 0 5 Super Royal 27½ inches by 19½.....        |                       |  | 0 8 0      |
| 0 6 Imperial 30 ditto 22 .....                |                       |  | 0 10 6     |
| 1 0 Do. extra thick, smooth or rough .....    |                       |  | 1 1 0      |
| 0 6 Elephant 28 inches 23 .....               |                       |  | 0 10 6     |
| 0 9 Columbian 35 ditto 23½.....               |                       |  | 0 15 0     |
| 0 9 Atlas 34 ditto 26 .....                   |                       |  | 0 15 0     |
| 1 0 Double Elephant 40 ditto 27 .....         |                       |  | 1 1 0      |
| 4 0 Antiquarian 53 ditto 31 .....             |                       |  | 5 0 0      |
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| 0 4 Royal..... ditto.....             | 0 7 0  |
| 1 0 Double Elephant..... ditto.....   | 0 18 0 |
| 0 7 Imperial..... rough-grained ..... | 0 12 6 |
| 0 5 Royal..... ditto.....             | 0 7 6  |

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|--------------------|-------|
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|             |                | 2 sht. thick. |    | 3 sht. |    | 4 sht. |    | 6 sht. |    |
|-------------|----------------|---------------|----|--------|----|--------|----|--------|----|
|             |                | s.            | d. | s.     | d. | s.     | d. | s.     | d. |
| Foolscap    | .....per sheet | 0             | 4  | 0      | 6  | 0      | 8  | 1      | 0  |
| Demy        | .....          | 0             | 6  | 0      | 9  | 1      | 0  | 1      | 6  |
| Medium      | .....          | 0             | 9  | 1      | 0  | 1      | 6  | 2      | 3  |
| Royal       | .....          | 1             | 0  | 1      | 6  | 1      | 9  | 2      | 6  |
| Super Royal | .....          | 1             | 3  | 1      | 9  | 2      | 6  | 3      | 6  |
| Imperial    | .....          | 1             | 9  | 2      | 6  | 3      | 3  | 5      | 6  |

**SUPERFINE BRISTOL BOARDS.**

|             |                | 2 sht. thick. |    | 3 sht. |    | 4 sht. |    | 6 sht. |    |
|-------------|----------------|---------------|----|--------|----|--------|----|--------|----|
|             |                | s.            | d. | s.     | d. | s.     | d. | s.     | d. |
| Foolscap    | .....per sheet | 0             | 4  | 0      | 5  | 0      | 7  | 0      | 10 |
| Demy        | .....          | 0             | 5  | 0      | 8  | 0      | 10 | 1      | 3  |
| Medium      | .....          | 0             | 7  | 0      | 10 | 1      | 0  | 1      | 7  |
| Royal       | .....          | 0             | 8  | 1      | 0  | 1      | 4  | 2      | 0  |
| Super Royal | .....          | 1             | 0  | 1      | 6  | 2      | 0  | 3      | 0  |
| Imperial    | .....          | 1             | 4  | 2      | 0  | 2      | 9  | 4      | 0  |

**BRISTOL MOUNTING BOARDS, WHITE AND COLOURED.**

|          |                | 3 sht. thick. |    | 4 sht. |    | 6 sht. |    | 8 sht. |    |
|----------|----------------|---------------|----|--------|----|--------|----|--------|----|
|          |                | s.            | d. | s.     | d. | s.     | d. | s.     | d. |
| Demy     | .....per sheet | 0             | 6  | 0      | 8  | 0      | 9  | 1      | 2  |
| Royal    | .....          | 0             | 8  | 0      | 10 | 1      | 4  | 1      | 8  |
| Imperial | .....          | 1             | 2  | 1      | 6  | 2      | 3  | 3      | 0  |

**SUPERFINE CRAYON BOARDS.**

|          |                | 3 sht. thick. |    | 4 sht. |    | 6 sht. |    |
|----------|----------------|---------------|----|--------|----|--------|----|
|          |                | s.            | d. | s.     | d. | s.     | d. |
| Foolscap | .....per sheet | 0             | 6  | 0      | 8  | 0      | 9  |
| Demy     | .....          | 0             | 8  | 0      | 10 | 1      | 3  |
| Royal    | .....          | 1             | 0  | 1      | 4  | 1      | 10 |
| Imperial | .....          | 2             | 0  | 2      | 6  | 3      | 9  |

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| 4, —            | 3½ 2½    | .....          | 0     | 8 6   | 2      | 6     | 7     | 0     | 0         | 18 0  |
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| Ditto ditto ditto.....            | .....      | 2 6 |
| Copal Varnish.....                | .....      | 1 6 |
| Mastic ditto.....                 | .....      | 1 6 |
| Crystal ditto .....               | .....      | 1 6 |
| Turpentine ditto.....             | .....      | 1 0 |
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| Linseed ditto .....               | .....      | 1 0 |
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